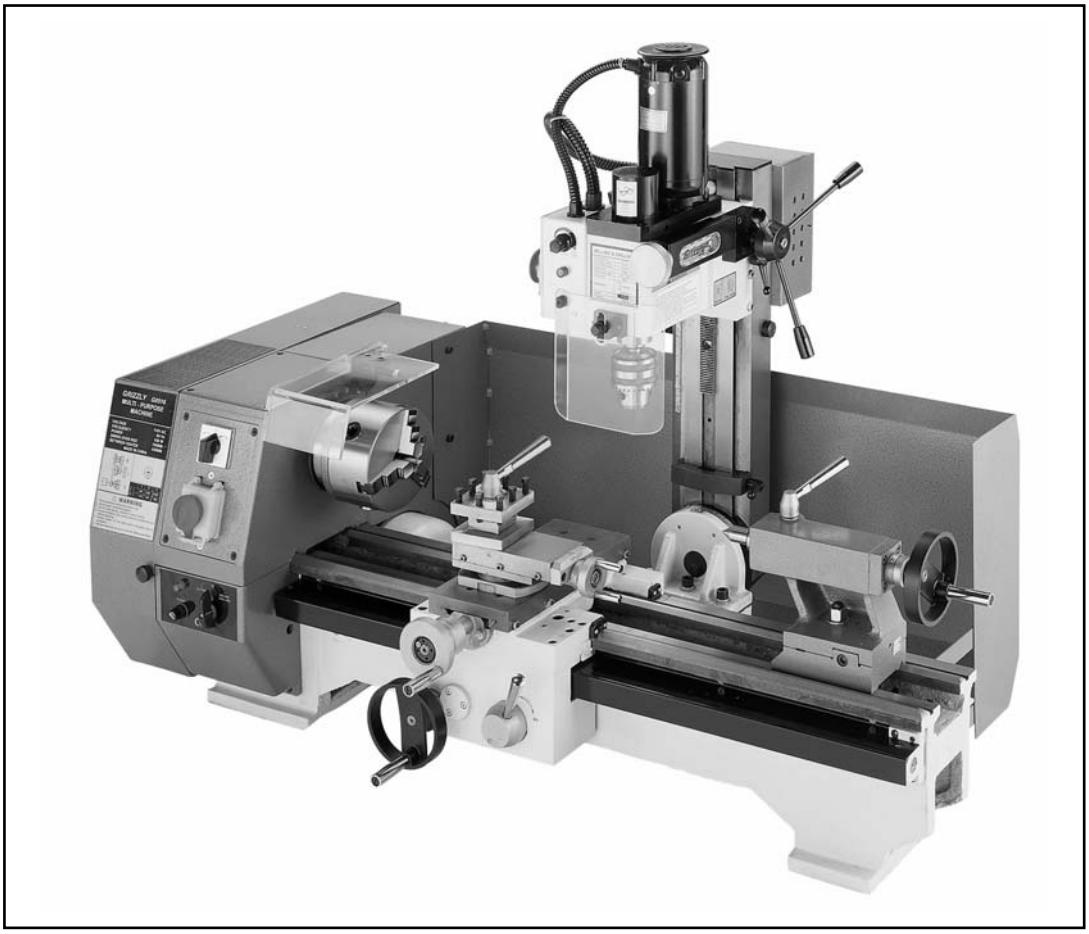
Grizzly Industrial, Inc.®

COMBINATION LATHE/MILL

MODEL G0516

INSTRUCTION MANUAL



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WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE OR FORM WITHOUT THE WRITTEN APPROVAL OF GRIZZLY INDUSTRIAL, INC.

ONLINE MANUAL DISCLAIMER
THE INFORMATION IN THIS MANUAL REPRESENTS THE CONFIGURATION OF THE MACHINE AS IT IS CURRENTLY BEING SHIPPED. THE MACHINE CONFIGURATION CAN CHANGE AS PRODUCT IMPROVEMENTS ARE INCORPORATED. IF YOU OWN AN EARLIER VERSION OF THE MACHINE, THIS MANUAL MAY NOT EXACTLY DEPICT YOUR MACHINE. CONTACT CUSTOMER SERVICE IF YOU HAVE ANY QUESTIONS ABOUT DIFFERENCES. PREVIOUS VERSIONS ARE NOT AVAILABLE ONLINE.

WARNING

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks, cement, and other masonry products.
- Arsenic and chromium from chemically treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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SECTION 1: SAFETY

⚠WARNING

For Your Own Safety Read Instruction Manual Before Operating This Equipment

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words which are intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.

⚠DANGER — **Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**

⚠WARNING — **Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

⚠CAUTION — **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.**

NOTICE — **This symbol is used to alert the user to useful information about proper operation of the equipment.**

⚠WARNING

Safety Instructions For Power Tools

1. **KEEP GUARDS IN PLACE** and in working order.

2. **REMOVE ADJUSTING KEYS AND WRENCHES**. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning on.

3. **KEEP WORK AREA CLEAN**. Cluttered areas and benches invite accidents.

4. **NEVER USE IN DANGEROUS ENVIRONMENT**. Do not use power tools in damp or wet locations, or where any flammable or noxious fumes may exist. Keep work area well lighted.

5. **KEEP CHILDREN AND VISITORS AWAY**. All children and visitors should be kept at a safe distance from work area.

6. **MAKE WORKSHOP CHILD PROOF** with padlocks, master switches, or by removing starter keys.

7. **NEVER FORCE TOOL**. It will do the job better and safer at the rate for which it was designed.

8. **USE RIGHT TOOL.** Do not force tool or attachment to do a job for which it was not designed.

⚠WARNING
Safety Instructions For Power Tools

9. **USE PROPER EXTENSION CORD**. Make sure your extension cord is in good condition. Conductor size should be in accordance with the chart below. The amperage rating should be listed on the motor or tool nameplate. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Your extension cord must also contain a ground wire and plug pin. Always repair or replace extension cords if they become damaged.

Minimum Gauge for Extension Cords

	LENGTH		
AMP RATING	25ft	50ft	100ft
0-6	18	16	16
7-10	18	16	14
11-12	16	16	14
13-16	14	12	12
17-20	12	12	10
21-30	10	10	No

10. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.

11. **ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.

12. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.

13. **DO NOT OVER-REACH.** Keep proper footing and balance at all times.

14. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

15. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury.

16. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** On machines with magnetic contact starting switches there is a risk of starting if the machine is bumped or jarred. Always disconnect from power source before adjusting or servicing. Make sure switch is in OFF position before reconnecting.

17. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

18. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Do not leave tool until it comes to a complete stop.

19. **NEVER OPERATE A MACHINE WHEN TIRED, OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Full mental alertness is required at all times when running a machine.

20. **NEVER ALLOW UNSUPERVISED OR UNTRAINED PERSONNEL TO OPERATE THE MACHINE.** Make sure any instructions you give in regards to machine operation are approved, correct, safe, and clearly understood.

21. **IF AT ANY TIME YOU ARE EXPERIENCING DIFFICULTIES** performing the intended operation, stop using the machine! Then contact our service department or ask a qualified expert how the operation should be performed.

⚠WARNING

Additional Safety Instructions For Lathe/Mills

1. **MAKE SURE ALL GUARDS** are in place and that the lathe/mill sits on a flat, stable surface.

2. **BEFORE STARTING THE LATHE/MILL** be certain the workpiece has been properly engaged in the chuck, tailstock, center, or vise (if in use) and that there is adequate clearance for full motion.

3. **ADJUST TOOL POST** to provide proper support for the turning tool you will be using. Test tool post clearance by rotating workpiece by hand before turning lathe on.

4. **SELECT THE TURNING SPEED** which is appropriate for the type of work, material, and tool bit. Allow the lathe or mill to gain its full speed before beginning a cut.

5. **NEVER REVERSE MOTOR DIRECTION** while the lathe/mill is in motion.

6. **DO NOT STOP LATHE USING YOUR HAND** against the workpiece or chuck.

7. **DO NOT LEAVE LATHE/MILL RUNNING UNATTENDED** for any reason.

8. **NEVER LEAVE A CHUCK KEY IN THE DRILL CHUCK OR LATHE CHUCK.**

9. **NEVER OPERATE THE LATHE/MILL WITH DAMAGED OR WORN PARTS.** Maintain your lathe/mill in proper working condition. Perform routine inspections and maintenance promptly when called for. Put away adjustment tools after use.

10. **MAKE SURE LATHE/MILL IS TURNED OFF**, disconnected from its power source and all moving parts have come to a complete stop before starting any inspection, adjustment, or maintenance procedure.

11. **KEEP LOOSE CLOTHING ARTICLES** such as sleeves, belts or jewelry items away from the lathe and drill spindles.

12. **ALWAYS USE THE PROPER CUTTING TOOLS** for the material you are turning, make certain they are sharp and that they are held firmly in the tool post.

13. **ALWAYS PLACE A BOARD OR PIECE OF PLYWOOD ACROSS THE BEDWAY** when removing or installing chucks to avoid the possibility of a finger pinch occurring between a loose chuck and the edges of the bedway.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment or poor work results.

⚠WARNING

Like all power tools, there is danger associated with the Model G0516 Lathe/Mill. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this tool with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

SECTION 2: CIRCUIT REQUIREMENTS

110V Operation

The Model G0516 Lathe/Mill is wired for 110V single-phase operation. The largest motor, the ¾ HP lathe motor, will safely draw 9 amps at 110V. A 10-amp fuse or circuit breaker should be used when connecting this combination lathe/mill to power. Circuit breakers rated any higher are not adequate to protect the circuit. Always check to see if the wires in the circuit are capable of handling an 9 amp load. If you are unsure, consult a qualified electrician.

If you operate this lathe/mill on any circuit that is already close to its capacity, it might blow a fuse or trip a circuit breaker. However, if an unusual load does not exist and a power failure still occurs, contact a qualified electrician or our service department.

The Model G0516 is equipped with its own fuses to prevent overload damage. **When replacing these fuses please replace with the following:**

Lathe .....25A Fuse
Mill/Drill .....5A Fuse

NOTICE

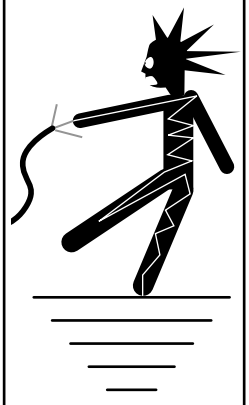
The Model G0516 cannot be rewired for 220V operation! Attempting to do this will void the warranty and will ruin the machine.

Extension Cords

If you find it necessary to use an extension cord with the Model G0516, make sure the cord is rated Hard Service (grade S) or better. Refer to the chart in the standard safety instructions to determine the minimum gauge for the extension cord. The extension cord must also contain a ground wire and plug pin. Always repair or replace extension cords when they become worn or damaged.

Grounding

In the event of an electrical short, grounding reduces the risk of electric shock by providing a path of least resistance to disperse electric current. This tool is equipped with a power cord having an equipment-grounding prong. **See Figure 1.** The outlet must be properly installed and grounded in accordance with all local codes and ordinances.



⚠WARNING

Verify that any existing electrical outlet and circuit you use is actually grounded. If not, it will be necessary to run a separate 12 A.W.G. copper grounding wire from the outlet to a known ground. If not grounded properly, serious personal injury could occur.

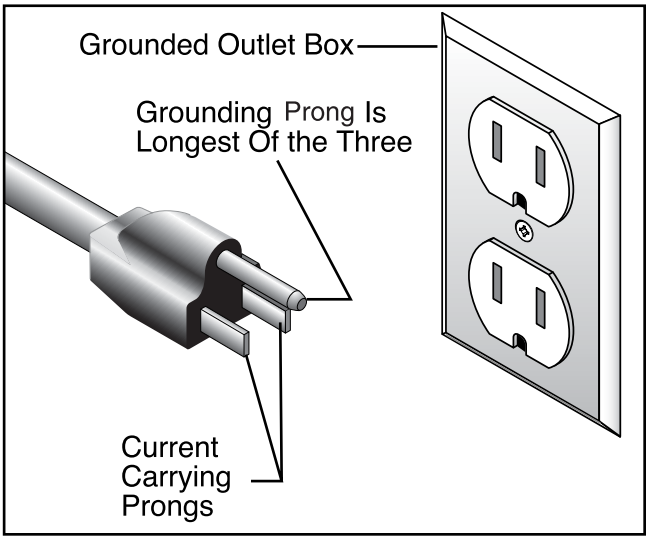
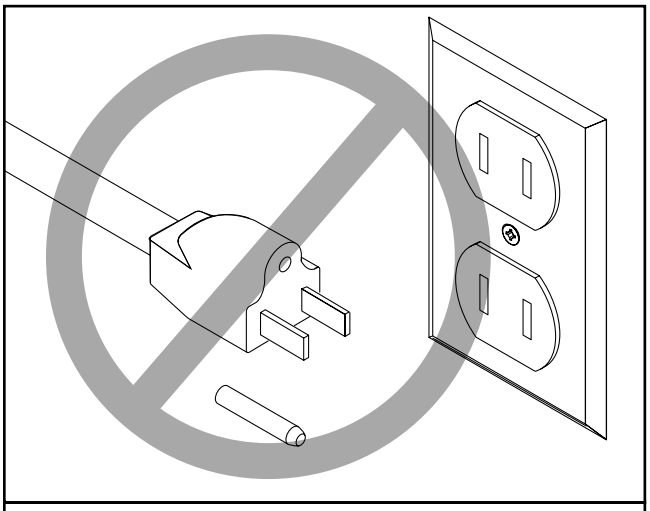


Figure 1. Typical 110V plug and outlet.



⚠CAUTION

This machine must have a ground prong in the plug to help ensure that it is grounded. DO NOT remove ground prong from plug to fit into a two-pronged outlet! If the plug will not fit the outlet, have the proper outlet installed by a qualified electrician.

SECTION 3: INTRODUCTION

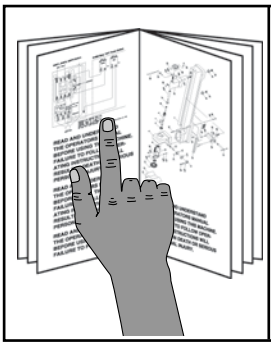
Commentary

We are proud to offer the Model G0516 Lathe/Mill. The Model G0516 is part of a growing Grizzly family of fine metalworking machinery. When used according to the guidelines set forth in this manual, you can expect years of trouble-free, enjoyable operation and proof of Grizzly's commitment to customer satisfaction.

Precision, versatility and high quality in a small package are what you get with our new G0516 Lathe/Mill Combo. The 6 speed lathe includes big machine features like a 4-way turret tool post, metric and inch thread cutting capabilities, a see-through eye shield, a ¾ HP motor and a 9¾" swing. The milling head features its own ⅘ HP variable speed motor, tilting column, MT#3 spindle taper and it has 8" of vertical travel.

We are pleased to provide this manual with the Model G0516. It was written to guide you through assembly, review safety considerations, and cover general operating procedures. It represents our effort to produce the best documentation possible. If you have any comments regarding this manual, please write to us at the address below:

Grizzly Industrial, Inc.
C/O Technical Documentation
P.O. Box 2069
Bellingham, WA 98227-2069



⚠WARNING

Read the manual before assembly and operation. Serious personal injury may result if safety or operational information is not understood or followed.

Most importantly, we stand behind our machines. If you have any service questions or parts requests, please call or write us at the location listed below.

Grizzly Industrial, Inc.
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The specifications, drawings, and photographs illustrated in this manual represent the Model G0516 as supplied when the manual was prepared. However, owing to Grizzly's policy of continuous improvement, changes may be made at any time with no obligation on the part of Grizzly. For your convenience, we always keep current Grizzly manuals available on our website at www.grizzly.com. Any updates to your machine will be reflected in these manuals as soon as they are complete. Visit our site often to check for the latest updates to this manual!

NOTICE

This machine is designed for highly skilled individuals who have an understanding of metalworking. This manual instructs on the assembly and controls of this machine, but does not describe the skills and techniques involved in crafting metal. If you are not an experienced metalworker, additional information sources are necessary to realize the full potential of this machine. Classes, trade journals, metalworking magazines, and your local library are good places to start.

SECTION 4: IDENTIFICATION

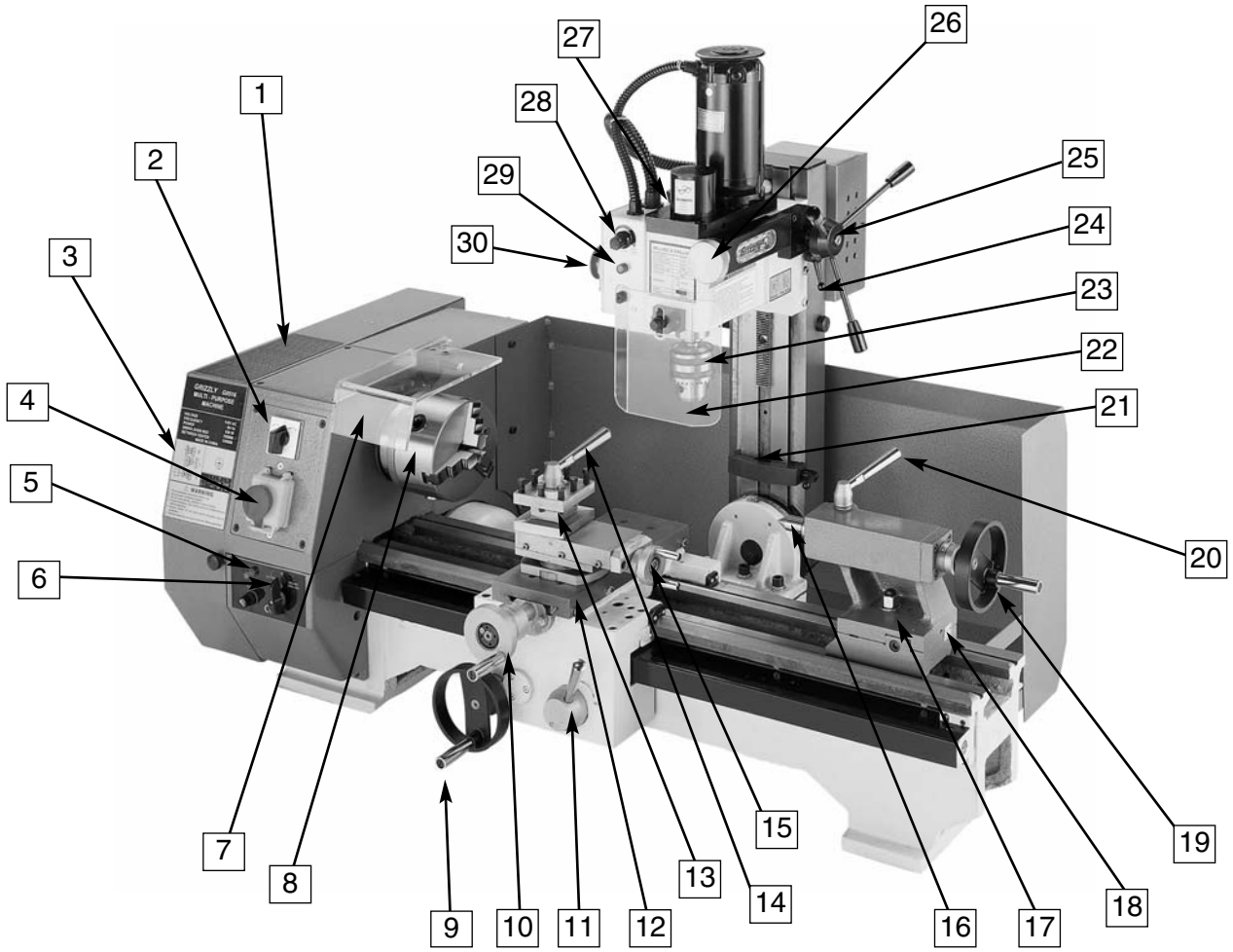


Figure 2. The following is a list of controls and components on the Model G0516. Please take time to become familiar with each term and its location. These terms will be used throughout the manual and knowing them is essential to understanding the instructions and terminology used in this manual.

1. Thread Pitch Gearing & Speed Charts
2. Lathe Forward/Reverse Switch
3. Machine ID/Safety Label
4. Lathe ON/OFF, Emergency Stop Switch
5. Lathe Power Indicator Light
6. Lathe/Mill Selector Switch
7. Headstock Eyeshield
8. Lathe Chuck
9. Carriage Feed Handwheel
10. Cross Slide Handwheel
11. Automatic Carriage Feed Lever
12. Compound Slide
13. Tool Post
14. Tool Post Lock Handle
15. Compound Slide Handwheel
16. Tailstock Center
17. Tailstock Clamp Bolt
18. Tailstock Axis Alignment Indicator
19. Tailstock Barrel Handwheel
20. Tailstock Center Lock
21. Mill Depth Stop
22. Mill/Drill Eyeshield
23. Drill Chuck
24. Mill/Drill Elevation Lock
25. Mill/Drill Coarse Downfeed Handle
26. Mill/Drill Head Fine Downfeed Knob
27. Mill/Drill High/Low Speed Selection Lever
28. Mill/Drill Variable Speed Adjustment Knob
29. Mill/Drill Power Indicator Light
30. Mill/Drill ON/OFF, Emergency Stop Switch

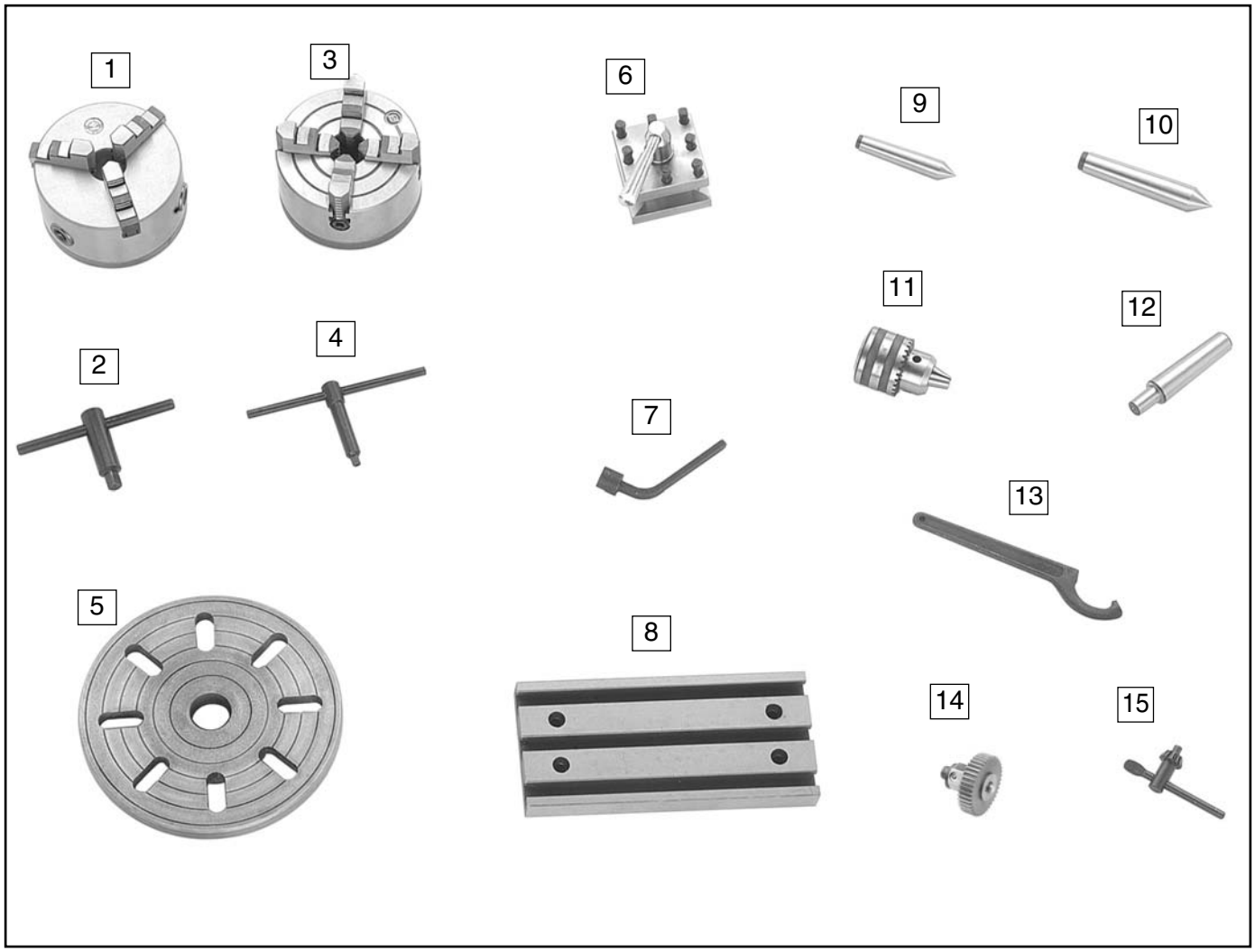


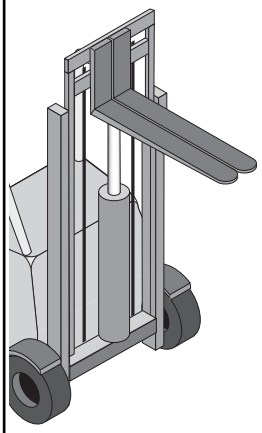
Figure 3. The picture above shows important accessories and tools that are included with the Model G0516. Please take some time to identify these items. Similar to the components and controls in **Figure 2**, these items are mentioned throughout the manual and knowing them is essential to understanding the instructions and terminology used in this manual.

1. 3-Jaw Chuck
2. 3-Jaw Chuck Key
3. 4-Jaw Chuck
4. 4-Jaw Chuck Key
5. Faceplate
6. Turret Tool Post
7. Square Head Wrench
8. Milling Table
9. Tailstock Dead Center
10. Headstock Dead Center
11. Drill Chuck
12. Drill Chuck Arbor
13. Spanner Wrench
14. Drill Chuck Key
15. Fixed-Shaft Gear 40T

SECTION 5: SET-UP

Unpacking

This combination lathe/mill is shipped from the manufacturer in a carefully packed crate. If you discover the machine is damaged after you've signed for delivery, and the truck and driver are gone, you will need to file a freight claim with the carrier. Save the containers and all packing materials for possible inspection by the carrier or its agent. Without the packing materials, filing a freight claim can be difficult. If you need assistance determining whether you need to file a freight claim, or with the procedure to file one, please contact our Customer Service.



⚠WARNING

The Model G0516 is a heavy machine, 420 lbs. shipping weight. DO NOT move the machine by yourself – you will need assistance and power equipment. Serious personal injury may occur if safe moving methods are not followed.

⚠CAUTION

Some metal parts may have sharp edges on them after they are formed. Please examine the edges of all metal parts before handling them. Failure to do so could result in injury.

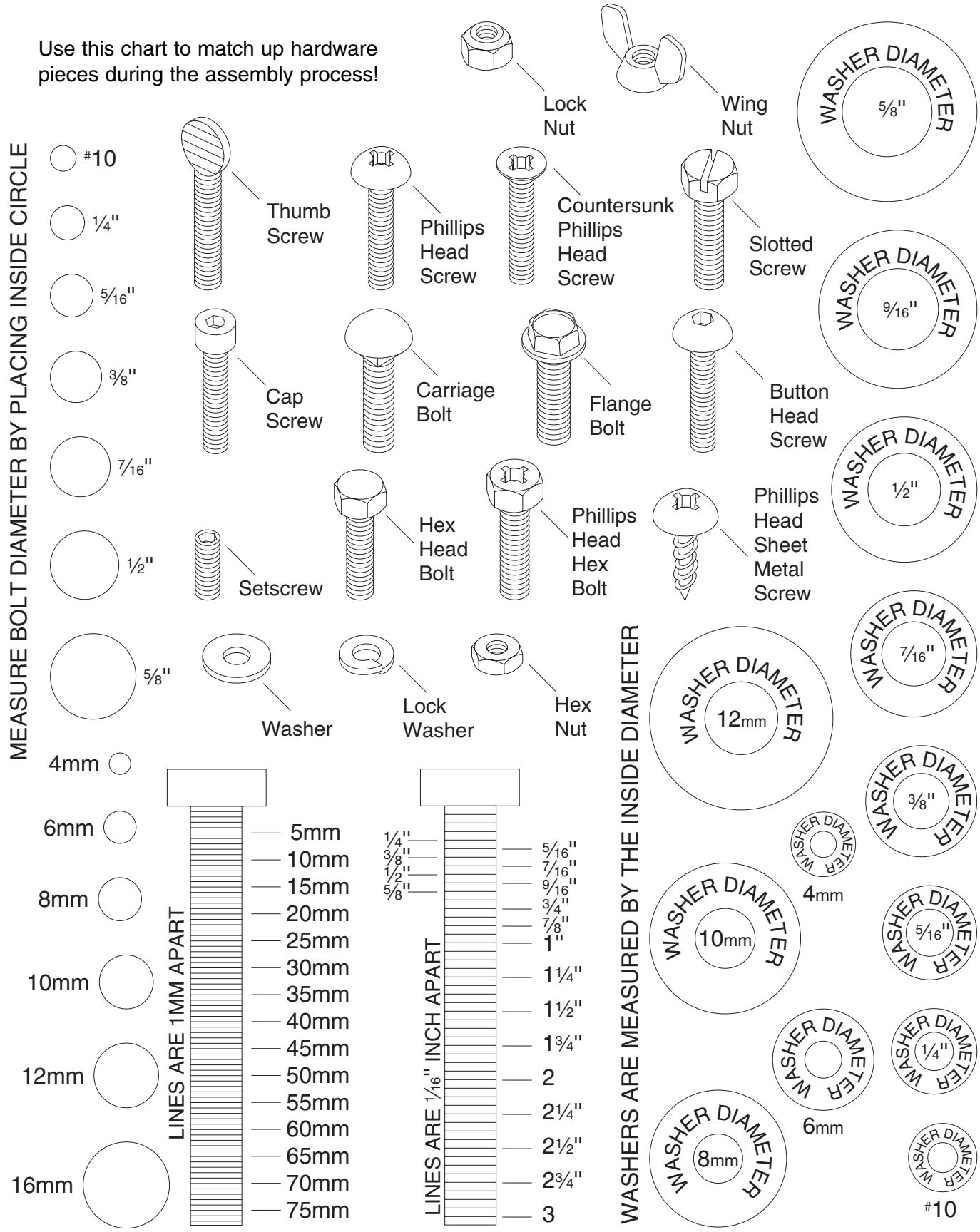
When you are completely satisfied with the condition of your shipment, you should inventory its parts.

Piece Inventory

Inside the crate you will find:

- Model G0516 Base Unit
- Mill/Drill Attachment
- Backsplash
- 6mm Allen® Wrench
- 5mm Allen® Wrench
- 4mm Allen® Wrench
- 3mm Allen® Wrench
- 75T Gear
- 72T Gear
- 70T Gears (2)
- 68T Gear
- 66T Gear
- 60T Gear
- 50T Gear
- 48T Gear
- 45T Gear
- 40T Gear
- Fixed-Shaft Gear 40T
- Lathe Chuck Key
- 5.5/7mm Combo Wrench
- 8/10mm Combo Wrench
- 12/14mm Combo Wrench
- 17/19mm Combo Wrench
- 36mm Wrench
- Drill Chuck Key
- 3 Outside Jaws
- Dead Center MT#2
- Dead Center MT#3
- Spanner Wrench
- 19mm T-Handle Wrench
- Square Head Wrench
- Oil Can
- Taper Shank MT#3 & Drill Chuck
- T-Nut
- Mill/Drill Table
- Cap Screws M8-1.25 x 25 (4)
- Mill/Drill Fuse 110V/5A
- Lathe Fuse 110V/25A
- Carriage Handle & Screw
- Apron Handle & Screw
- Faceplate
- 4-Jaw Chuck w/Flange
- Fixing Pin

Hardware Recognition Chart



Clean Up

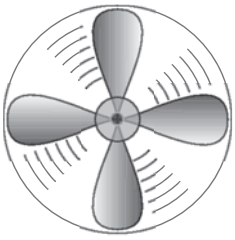
The unpainted surfaces are coated with a waxy oil to protect them from corrosion during shipment. Remove this protective coating with a solvent cleaner or citrus-based degreaser such as Grizzly's G7895 Degreaser. To clean thoroughly, some parts may need to be removed. **For optimum performance from your machine, make sure you clean all moving parts or sliding contact surfaces that are coated.** Avoid chlorine-based solvents as they may damage painted surfaces should they come in contact. Always follow the manufacturer's instructions when using any type of cleaning product.

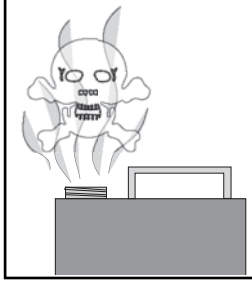
⚠WARNING

Do not use gasoline or other petroleum-based solvents to clean with. They have low flash points which make them extremely flammable. A risk of explosion and burning exists if these products are used.

⚠WARNING

Do not smoke while using solvents. A risk of explosion or fire exists and may result in serious personal injury.





⚠CAUTION

Many of the solvents commonly used to clean machinery can be toxic when inhaled or ingested. Always work in well-ventilated areas far from potential ignition sources when dealing with solvents. Use care when disposing of waste rags and towels to be sure they do not create fire or environmental hazards.

Site Considerations

FLOOR AND WORKBENCH LOAD

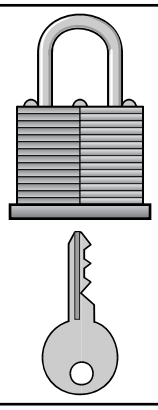
Your Model G0516 represents a medium weight load in a 16½" X 43" footprint. Most commercial or garage shop floors should be sufficient to carry the weight. **Before** moving the Lathe/Mill onto a residential floor, inspect it carefully to determine that it will be sufficient to carry the load of the machine, the device for moving it and its operators. If you question the strength of your floor, you should consider having it inspected for possible reinforcement. The workbench the machine rests on should be strong and stable enough to hold the weight of the machine and the workpiece to be turned.

WORKING CLEARANCES

Working clearances can be thought of as the distances between machines and obstacles that allow safe operation of every machine without limitation. Consider existing and anticipated machine needs, size of material to be processed through each machine, and space for auxiliary stands and/or work tables. Also consider the relative position of each machine to one another for efficient material handling.

LIGHTING AND OUTLETS

Lighting should be bright enough to eliminate shadow and prevent eye strain. Electrical circuits should be dedicated or large enough to handle amperage requirements. Outlets should be located near each machine so power or extension cords are clear of high-traffic areas. Observe local electrical codes for proper installation of new lighting, outlets, or circuits.

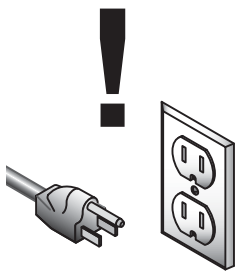


⚠CAUTION

Make your shop "child safe." Ensure that your workplace is inaccessible to youngsters by closing and locking all entrances when you are away. Never allow visitors in your shop when assembling, adjusting or operating equipment.

Beginning Assembly

This section will cover the minimum assembly and adjustment instructions needed to begin operation. For best results, complete the assembly in the order provided in this manual and then read the remaining portion of the manual before attempting any type of operations.



⚠WARNING

Do not connect the machine to power at this time. The machine must remain unplugged throughout the entire assembly process. Failure to do this may result in serious personal injury.

Install Support Leg

To install the support leg:

1. Get the help of an assistant.

2. Tip the lathe forward and have your assistant thread the leg w/attached foot into the lathe stand as shown in **Figure 4**.

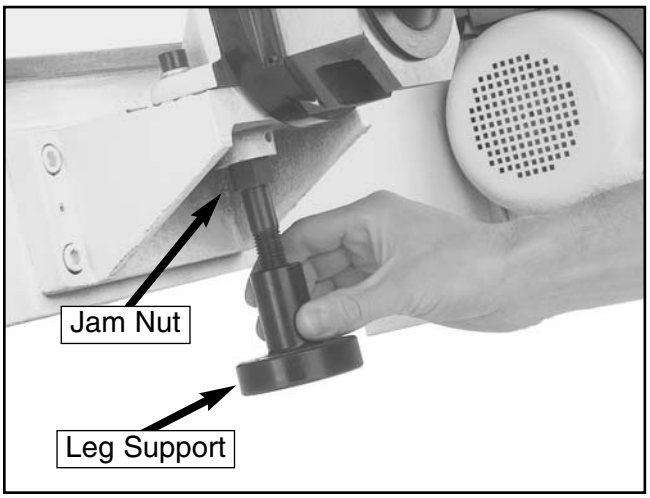


Figure 4. Installing support leg.

3. Adjust the support leg until it just makes contact with the surface of your workbench or stand.

4. Tighten the jam nut so the leg will not move.

Attach Mill/Drill to Lathe

To attach the mill/drill unit to the lathe body:

1. Get the help of an assistant.

2. Locate the included nut that fits on the large bolt in the mounting bracket, so you have it ready for the next step.

3. Place the bottom end of the mill/drill unit over the mounting bolt and up against the mounting bracket, then have your assistant thread the nut onto the bolt as shown in **Figure 5** — but DO NOT tighten the nut yet.

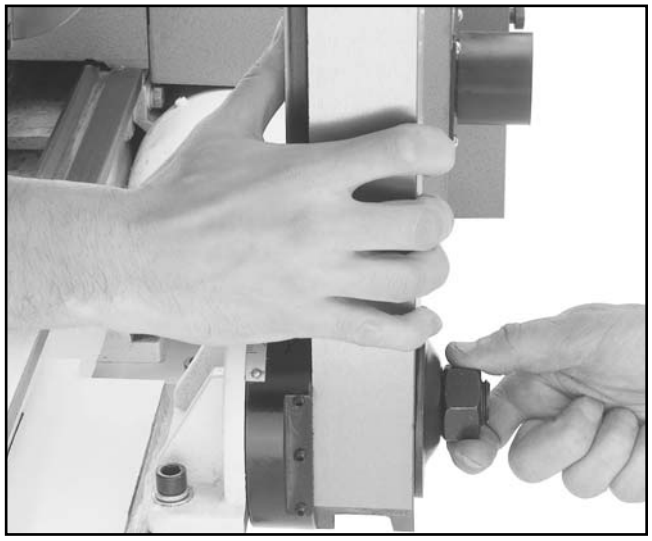


Figure 5. Threading nut onto bolt with mill/drill unit in place against mounting bracket.

4. Align the indicator on the mounting bracket with the "0" line on the mill/drill swivel scale, as shown in **Figure 6**.

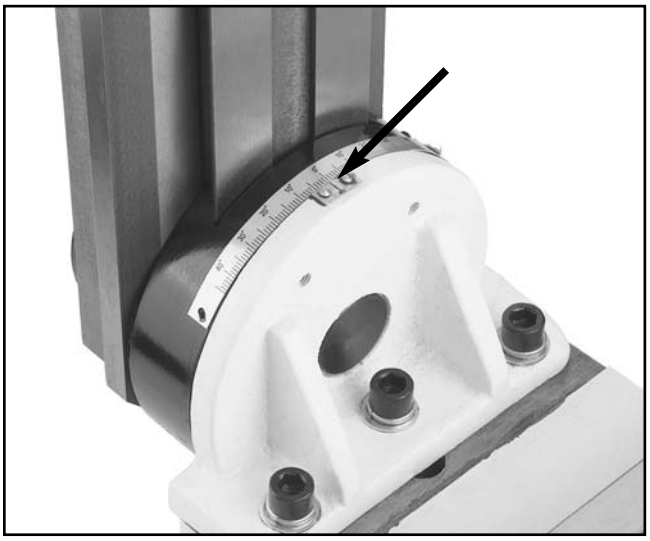


Figure 6. Mill/drill swivel scale aligned with hub indicator line in the "0" position.

5. Now, tighten the large nut that attaches the mill/drill unit to the lathe hub bracket.

Install Backsplash

To install the backsplash:

1. Get the help of an assistant.

2. Hold the backsplash against the back of the lathe so all of the mounting holes are aligned, and instruct your assistant to secure the back splash with the (2) M6-1 X 10 cap screws as shown in **Figure 7**, and (2) M8-1.25 X 15 hex bolts and washers as shown in **Figure 8**.

Figure 7. Two cap screws secure the left-hand side of the back splash to the lathe.

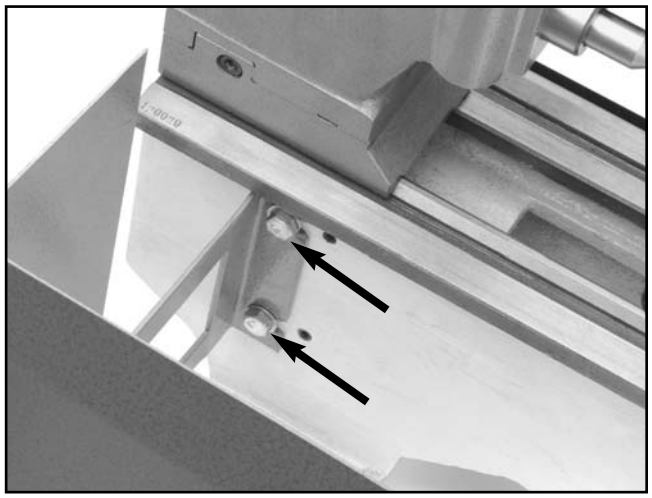


Figure 8. Two hex bolts/washers secure the right-hand side of the backsplash to the lathe.

Mount Mill/Drill Eyeshield

To mount the mill/drill eyeshield:

1. Attach the eyeshield to the mill/drill with the knurled knob as shown in **Figure 9**. *Note—the eyeshield provides the best coverage when it is positioned down as far as it can go.*

Figure 9. Attaching eyeshield to the mill/drill head.

Test Run Lathe

Before continuing to *Section 6: Operations*, test run the lathe to make sure it runs properly.

To test run the lathe:

1. Make sure that there is NOT a chuck key inserted in the chuck, and that the lathe eyeshield is in the down position over the lathe chuck. *Make this step a habit that you perform every time you start the lathe.*

2. Familiarize yourself with the lathe controls shown in **Figure 10**. Make sure the STOP button is all the way down before continuing.

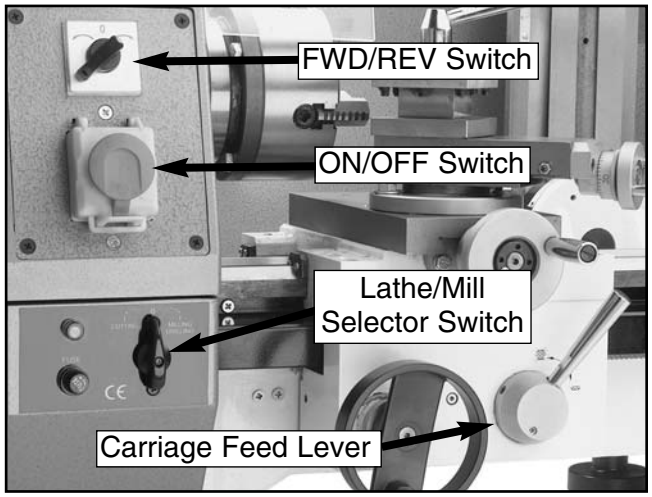


Figure 10. Lathe controls.

3. Plug the machine into the power outlet!

4. Move the carriage feed lever up to the disengage mode. It is important that the carriage feed is NOT moving and is in the neutral position until later.

5. Turn the Lathe/Mill selector switch to the "CUTTING" position. The lathe power indicator light should light up. Note—*If it is does not light up, unplug the machine and check the fuse, your power source, and the connections on the machine before attempting to start the lathe. Call our service department if you cannot easily resolve the issue.*

6. Turn the FWD/REV switch clockwise. This should make the lathe chuck turn clockwise when you start the machine.

7. Flip up the emergency stop button to reveal the red and green ON/OFF buttons.

8. Stand to the side of the lathe chuck line of rotation, and press the green button to turn the lathe *ON*. If the carriage starts moving, immediately push the STOP button and disengage the carriage feed lever, then restart the lathe.

9. Allow the lathe to run for at least two full minutes to make sure it is running satisfactorily.

10. Press the lathe emergency stop button to turn the lathe *OFF*.

11. After the lathe chuck has come to a complete stop, turn the FWD/REV switch counterclockwise.

12. Stand to the side of the lathe chuck line of rotation, and press the green button to turn the lathe *ON*.

13. Allow the lathe to run for at least two full minutes to make sure it is running satisfactorily.

14. Press the emergency stop button to turn the lathe *OFF*.

15. After the lathe has come to a complete stop, engage the carriage handwheel, rotate the handwheel to center the carriage on the bed, then disengage the handwheel.

16. Engage the automatic carriage feed lever.

17. Stand to the side of the lathe chuck line of rotation, and press the green button to turn the lathe *ON*.

18. Verify that the carriage moves along the bed, and press the emergency stop button to turn the lathe *OFF*.

Test Run Mill/Drill

Before continuing to the Operations section, test run the mill/drill to verify that it runs properly.

To test run the mill/drill:

1. Make sure that the factory installed drill chuck is tight, that there is not a chuck key in the chuck, and that the eyeshield is firmly mounted between you and the drill chuck. *Make this step a habit that you perform every time you start the lathe.*

2. Plug the machine into the power outlet.

3. Familiarize yourself with the mill/drill controls shown in **Figures 11 and 12**.

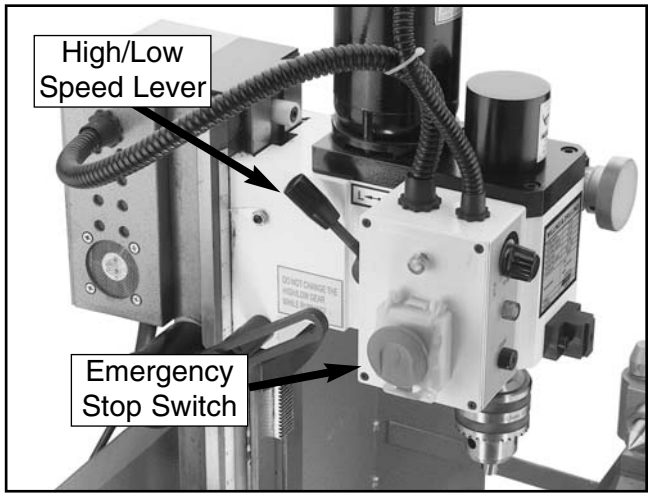


Figure 11. Mill/drill controls.

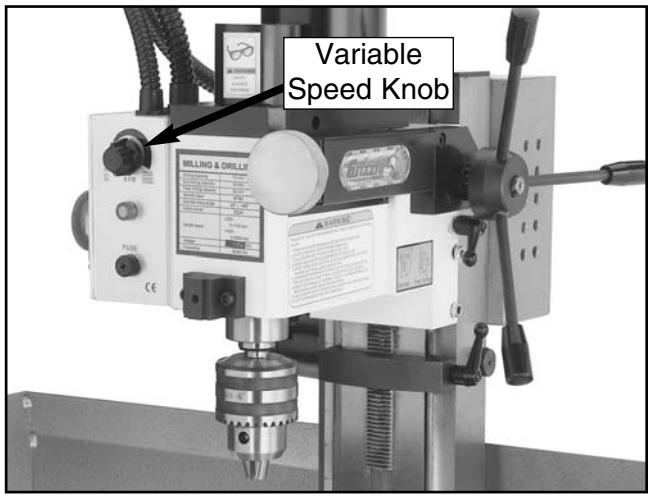


Figure 12. Mill/drill controls.

4. Rotate the Lathe/Mill selector switch to the "MILLING" position.

5. Move the high/low speed lever to the "L" position for low speed.

6. Unlatch mill/drill emergency stop switch cover—this should make the mill/drill power indicator light up.

7. Rotate the variable speed knob clockwise to turn the mill/drill spindle *ON*. The farther you rotate the variable speed knob, the faster the mill/drill spindle will rotate.

8. Rotate the variable speed dial clockwise as far as it will go, so the drill chuck is spinning at top speed.

9. Rotate the variable speed dial counterclockwise as far as it will go. *This should stop the drill chuck.*

10. Press the mill/drill emergency stop button to turn the mill/drill *OFF*.

11. Move the high/low speed lever to the "H" position for high speed.

12. Unlatch mill/drill emergency stop switch cover—this should make the mill/drill power indicator light up.

13. Rotate the variable speed knob clockwise to turn the mill/drill spindle *ON*. The farther you rotate the variable speed knob, the faster the mill/drill spindle will rotate.

14. Rotate the variable speed dial clockwise as far as it will go, so the drill chuck is spinning at top speed.

15. Rotate the variable speed dial counterclockwise as far as it will go. *This should stop the drill chuck.*

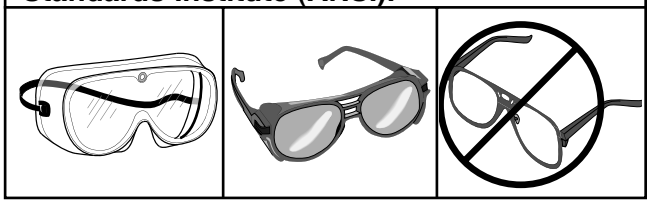
16. Press the mill/drill emergency stop button to turn the mill/drill *OFF*.

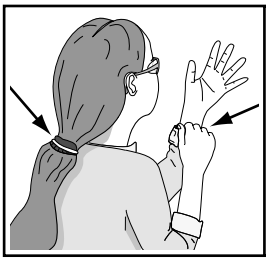
SECTION 6: LATHE OPERATIONS

Your safety is important! Please follow the warnings below during this entire section:

⚠WARNING

Operating this equipment has the potential for flying debris to cause eye injury. Always wear safety glasses or goggles when operating equipment. Everyday glasses or reading glasses only have impact resistant lenses, they are not safety glasses. Be certain the safety glasses you wear meet the appropriate standards of the American National Standards Institute (ANSI).





⚠WARNING

Keep loose clothing out of the way of machinery and keep hair pulled back during operations.

⚠WARNING

Never leave a chuck key in the chuck when it is not in use. If the machine is accidentally started, the chuck key can become a projectile and cause serious personal injury.

NOTICE

The following section was designed to give instructions on how to prepare the various items of your *LATHE* during operation procedures; however, this section is in no way designed to instruct on lathe techniques or machining skills. WE STRONGLY RECOMMEND that you read books, trade magazines, or get formal training to gain the skills needed to operate the lathe portion of your machine.

Lathe

To get the most out of your machine, please take the time to familiarize yourself with the various controls and components of the mill/drill, as shown in **Figures 13** and **14**.

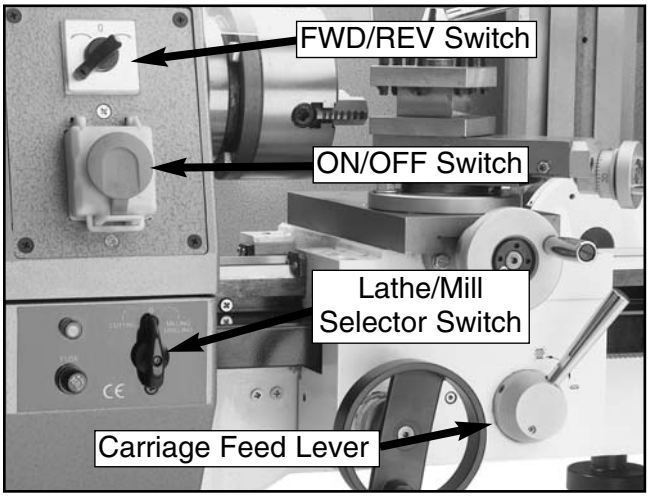


Figure 13. Lathe controls.

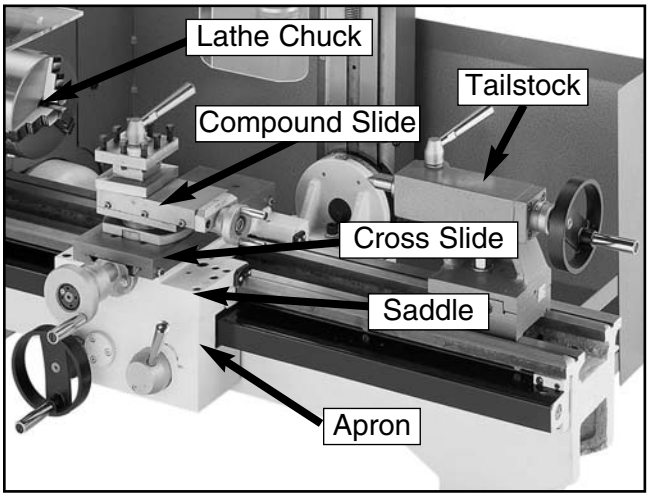


Figure 14. Lathe components.

Removing Chuck or Faceplate

The Model G0516 spindle nose mounting system uses a circular lock plate with slotted holes that are oversized at one end (keyholes). When the lock plate is rotated counterclockwise (as facing the chuck), the chuck or faceplate studs with mounting nuts can pass through the spindle nose. When the lock plate is rotated toward the back of the lathe, the oversized holes narrow to the size of the studs, allowing the mounting nuts to be tightened against the back of the lock plate, thus, securing the chuck or faceplate.

To remove a chuck or faceplate from the lathe spindle nose:

1. **Disconnect the lathe/mill from the power source!**

2. Move the lathe eyeshield back and out of the way of the lathe chuck so you have access.

3. Familiarize yourself with the spindle nose components shown in **Figure 15**.

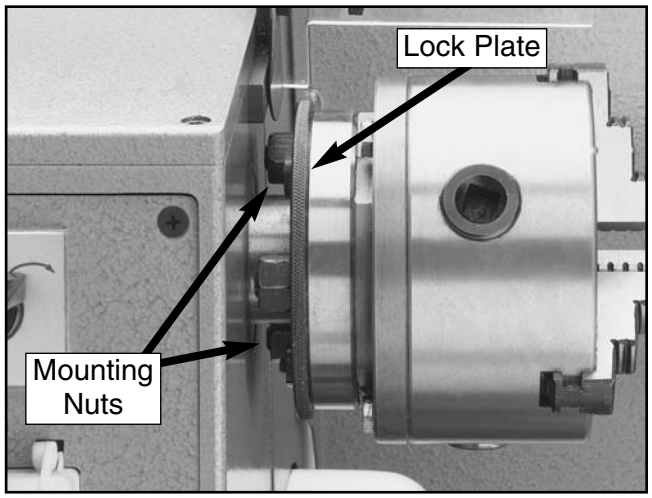
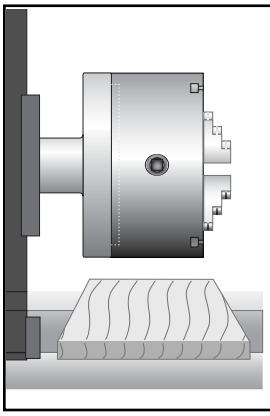


Figure 15. Spindle nose components.

4. Place a piece of plywood over the bed-ways to protect your hands.



⚠CAUTION

ALWAYS place a piece of plywood over lathe bed-ways before removing or installing a lathe chuck. This covers the sharp corners of the bed, protecting your hands and fingers from a pinch injury.

5. Hold the chuck/faceplate with your hand or a chuck key, and using a 17mm wrench, loosen the 3 chuck mounting nuts on the back of the knurled lock plate. DO NOT back the nuts out all the way or they will scratch the metal cover when you rotate the lathe chuck.

6. Rotate the knurled lock plate toward the front of the lathe.

7. Remove the chuck/faceplate from the spindle nose by pulling it out (**Figure 16**). *Note—the tolerances are tight, so you may need to wiggle the chuck/faceplate back-and-forth, rotate it ¼ of a turn, wiggle it, rotate it and continue repeating this process until the chuck comes out. Never use a pry bar or other similar tool to force the chuck/faceplate out!*

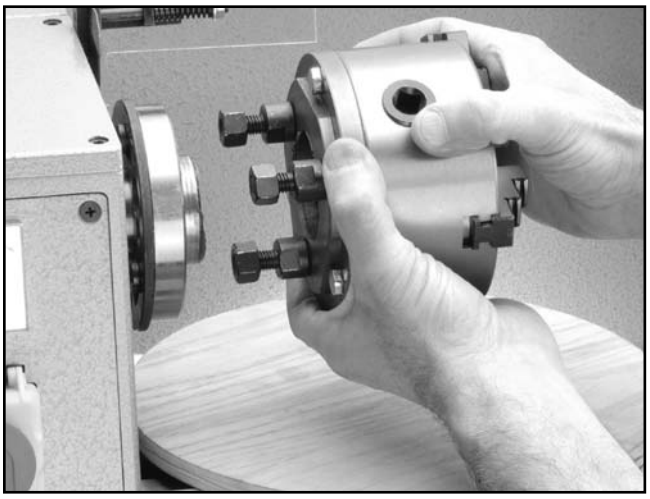


Figure 16. Removing lathe chuck.

Installing Chuck or Faceplate

To install a chuck/faceplate:

1. **Disconnect the lathe/mill from the power source!**

2. Insert the 3 mounting studs into the back of the chuck and tighten them down. If you are switching chucks, take the mounting studs out of the previously removed chuck and use them in the chuck you are going to install. Also, make sure that a chuck mounting nut is on each of the studs.

3. Make sure that the knurled lock plate is rotated all the way toward the front of the lathe.

4. Insert the chuck into the spindle nose.

5. Rotate the knurled lock plate toward the back of the lathe until it stops. If the lock plate will NOT rotate more than a fraction of an inch, then the chuck is not completely inserted. Make sure the chuck is completely inserted so the lock plate can be rotated properly.

6. Hold the chuck/faceplate with your hand or a key. Using a 17mm wrench, snug the 3 chuck mounting nuts to the back of the knurled lock plate, then final tighten all 3 with even pressure.

7. Remove all wrenches and chuck keys from the chuck/spindle nose.

8. Move the lathe eyeshield down over the chuck before operating.

Installing Tailstock Dead Center

There are 2 dead centers included with the Model G0516. The smaller dead center is a MT#2 (Morse Taper) and fits in the tailstock barrel.

To install the tailstock dead center:

1. Familiarize yourself with the tailstock components shown in **Figure 17**.

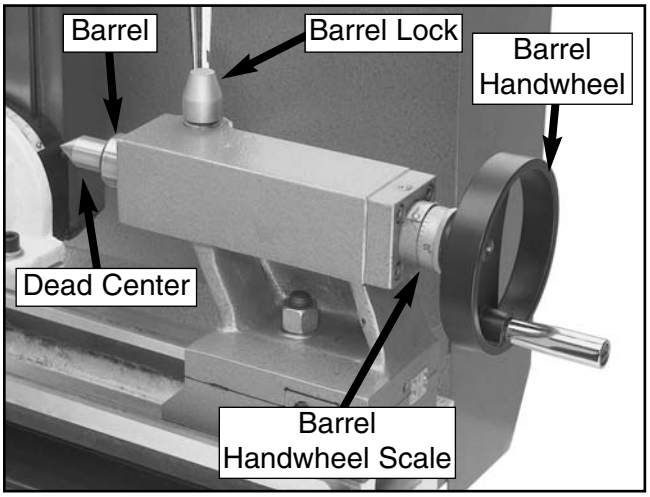


Figure 17. Tailstock components.

2. Make sure that the MT#2 dead center and tailstock barrel are clean and free of any dirt, dust, grease or oil. These parts will last longer and remain accurate when properly cleaned before each assembly. Morse tapers will not interlock when dirt or oil are present on the mounting surfaces.

3. Insert the end of the dead center into the tailstock barrel, as shown in **Figure 18**, until it seats tight enough that it will not rotate when turned by hand. *Note—do not worry about pushing the dead center into the barrel too far. The force of the center contacting a mounted workpiece will fully seat the taper when the handwheel is tightened.*

4. Tighten the barrel lock to prevent the tailstock barrel from moving during operation.

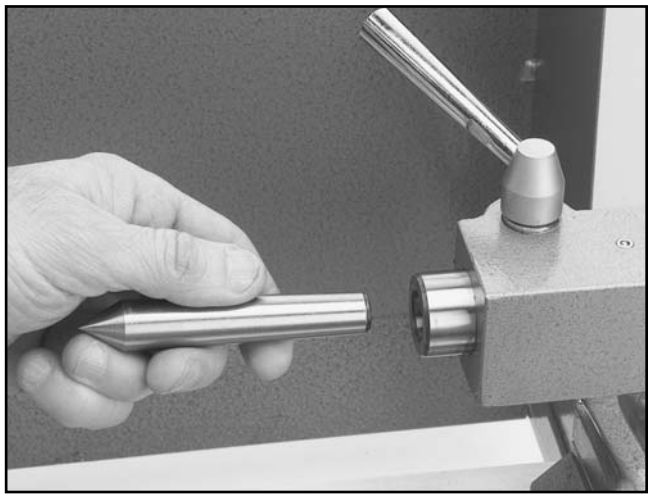


Figure 18. Inserting dead center into tailstock barrel.

Removing Tailstock Dead Center

To remove the tailstock dead center:

1. Use the barrel handwheel to move the tailstock barrel all the way back into the tailstock until the handwheel will no longer turn.

2. Pull the dead center out of the tailstock barrel.

Adjusting Tailstock Longitude Position

The tailstock on the Model G0516 clamps to the bed with the nut shown in **Figure 19**. This nut allows the tailstock to be positioned longitudinally along the bed and then locked in place.

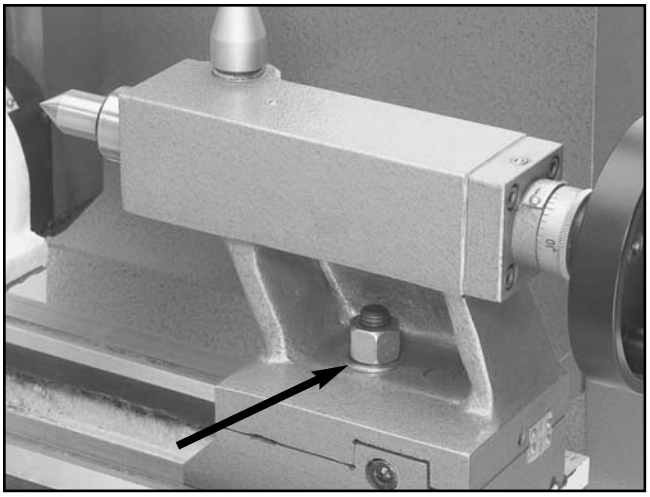


Figure 19. Tailstock clamp bolt.

To adjust the tailstock longitude position:

1. Use a 17mm wrench to loosen the tailstock clamp bolt.

2. With your hands, move the tailstock into position along the bed.

3. Tighten the tailstock clamp bolt to secure the tailstock into position.

Changing Tool Posts

The Model G0516 comes with a turret tool post. Grizzly also offers quick change tool post as an optional accessory to the Model G0516. Both tool posts can be removed and replaced in the same manner.

To change a tool post from the compound rest:

1. Rotate the tool post lock handle counter-clockwise to remove it as in **Figure 20**.

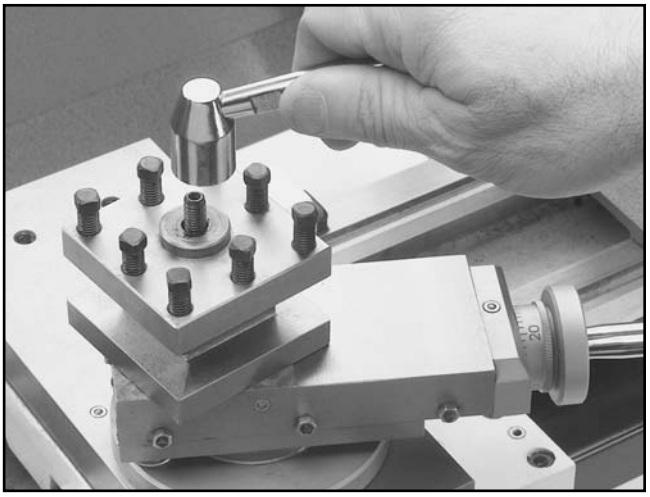


Figure 20. Removing tool post lock handle.

2. Pull the installed tool post straight up to remove it from the compound slide, as shown in **Figure 21**.

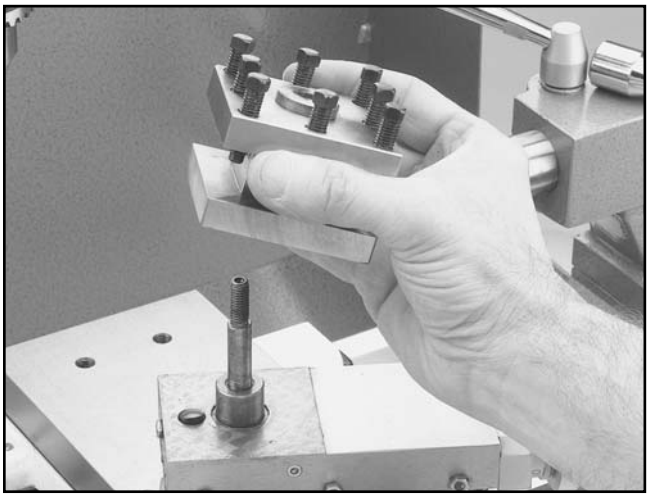


Figure 21. Removing tool post.

3. Replace the new tool post on the compound slide.

4. Position the tool post to its intended working angle.

5. Replace the tool post lock handle and tighten it to keep the tool post secured in place. **Figure 22** shows the quick change tool post installed.

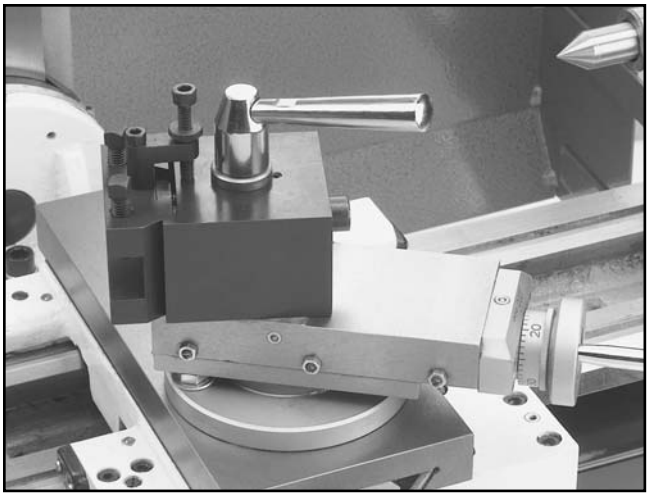


Figure 22. Optional quick change tool post installed.

Adjusting Cross Slide

The cross slide is only designed to move perpendicular to the longitudinal axis of the lathe, and it features a scale on the handwheel that displays graduations of one thousandths of an inch (.001").

To adjust the cross slide:

1. Using the handwheel, back the cross slide away from your starting point by at least .015", then move the cross slide forward to your starting point. *Note—this procedure will clear any free movement (or backlash) in the lead screw so your handwheel scale reading will be accurate.*

2. Hold the handwheel still and turn the scale so the "0" mark lines up with the ".000" mark on the cross slide, as shown in **Figure 23**. As long as you avoid backlash by continuing to move the cross slide in the same direction, the scale on the handwheel will be accurate.

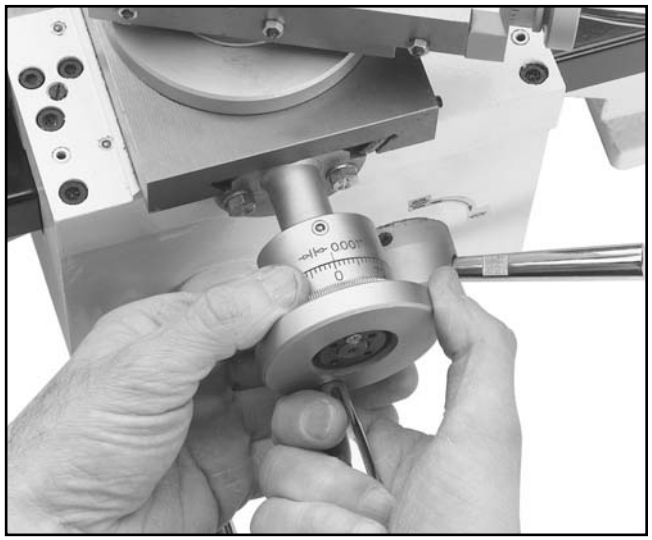


Figure 23. Adjusting handwheel scale.

3. After moving the cross slide backward after your operation, remember to clear the backlash before moving the cross slide forward to the "0" mark for the next cut.

Adjusting Compound Slide

Similar to the cross slide, the compound slide features a scale that displays graduations of one thousandths of an inch (.001"). Unlike the cross slide, the compound slide can be rotated to a set angle and then it can be moved back and forth along the axis of that angle.

To adjust the compound slide:

1. Loosen the compound slide bolts shown in **Figure 24** to allow it to be rotated.

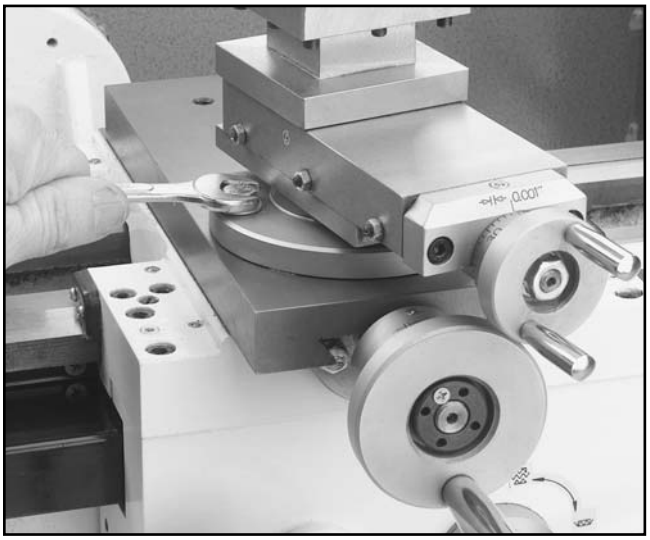


Figure 24. Compound slide bolts.

2. Rotate the compound slide to the angle needed for your procedure.

3. Tighten the compound slide bolts, and check the angle again to make sure it did not move during tightening.

4. Use the compound slide handwheel to move the tool back and forth along the axis of the new angle. Similar to adjusting the cross slide handwheel, make sure the threads are engaging and all backlash has been cleared before you set the handwheel scale to "0", or it will not be accurate.

Adjusting Carriage

Like most lathes, the longitudinal movement of the carriage (carriage feed) on the Model G0516 can be controlled both manually and automatically. Before proceeding, take a closer look at the carriage controls shown in **Figure 25**.

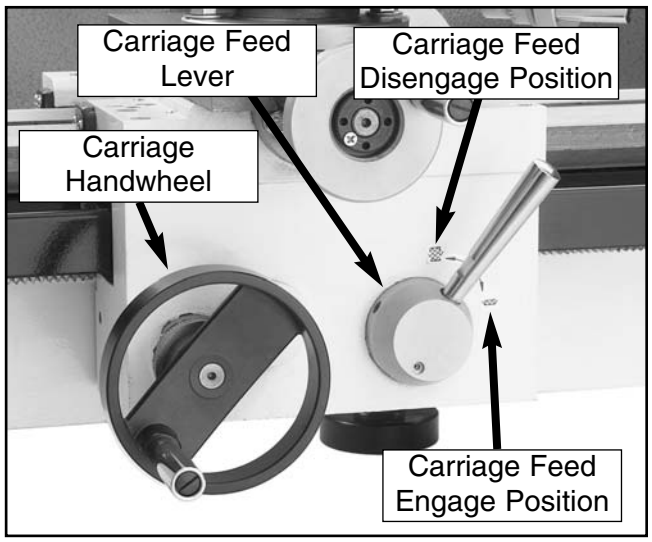


Figure 25. Carriage controls.

To move the carriage feed manually:

1. Push the carriage feed handwheel toward the carriage to engage the gear on the lead screw.

2. Rotate the handwheel clockwise to move the carriage right and rotate the handwheel counterclockwise to move the carriage left.

3. Set the handwheel scale in the same manner as described in the “Adjusting Cross Slide” instructions, and be sure to account for the backlash.

To use the automatic carriage feed:

1. Select the desired feed rate you need by looking at the charts on the lathe drive cover. When new, Model G0516 is geared for a carriage feed rate of .005" per revolution.

   Use the manual feed handwheel to position the carriage to your desired starting point and set the scale on the handwheel to “0”.

2. Move the carriage feed lever down to engage the half-nut, which in turn, makes the automatic carriage feed active.

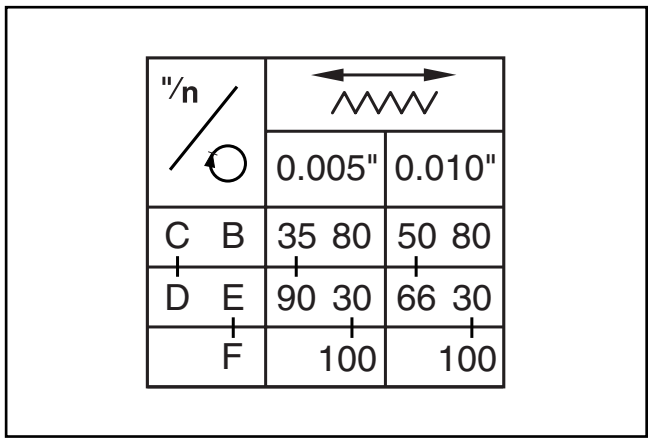
3. Pull out the carriage manual feed handwheel to unlock it so it does not rotate when the automatic carriage feed is engaged.

The carriage feed will now move forward or backward, depending on which direction you have selected for lathe rotation.

Understanding Gear Charts

The Model G0516 can be geared for a variety of different feed rates, so charts are placed on the drive cover of the lathe that explain how to set up the gear combinations for each type of carriage feed application. These applications are broken into two categories of charts—turning and threading.

Turning Chart—The speeds given on the turning chart represent standard speeds for most types of turning applications. See **Figure 26**.



"/n	0.005"	0.010"
C B	35 80	50 80
D E	90 30	66 30
F	100	100

Figure 26. Turning chart.

Threading Charts—By arranging the gears as shown on the charts, you can set up the carriage feed to cut any of the thread pitches displayed. See **Figure 27**.

1"/n	8	9	10	11	12	14
B	80	90	70	70	70	70
D E	75 40	60 40	72 40	72 40	72	60 40
F	50	45	60	66	40	70

1"/n	16	18	20	24	32	40
B	70	70	70	70	70	70
D E	60 40	60 80	60 80	50 40	45 80	30 40
F	80	45	50	100	60	100

mm	0.4	0.5	0.6	0.7	0.8	1
C B	68 80	68 80	68 80	68 40	68 80	68 80
D E	72 30	72 35	72 45	72 35	72 48	60
F	75	70	75	100	60	72

mm	1.25	1.5	1.75	2	2.5	3
C B	68 80	68 80	68 80	68 80	68 80	68 80
D E	72 60	72 60	72 70	72 70	72 75	72 90
F	48	40	40	35	30	30

Figure 27. Threading charts.

This is how to read the feed rate charts:

1. The box in the upper left-hand corner of each chart tells whether that chart represents carriage feed movement for standard or metric threads. These boxes are shaded in **Figure 28**.

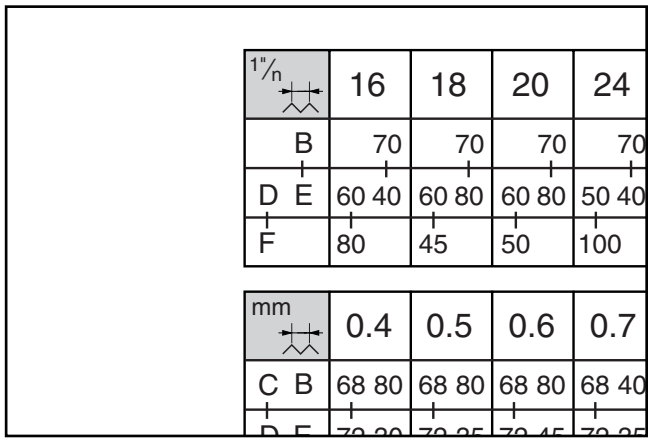


Figure 28. The shaded box indicates whether the chart is for standard or metric threads.

2. The boxes in the top row of each chart (excluding the box in the left-hand corner) shows the thread pitches listed on that chart. These boxes are shaded in **Figure 29**.

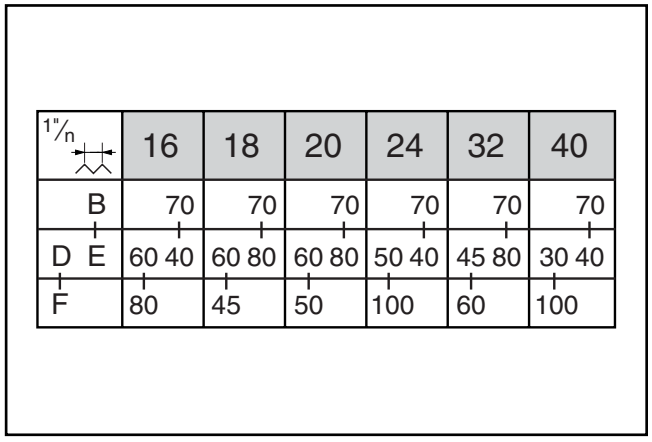


Figure 29. The shaded boxes show the thread pitches listed on this chart.

3. The boxes on the left-hand column (excluding the box in the upper left-hand corner) represent the gear positions on each shaft. These boxes are shaded in **Figure 30** and the shafts are called out with arrows.

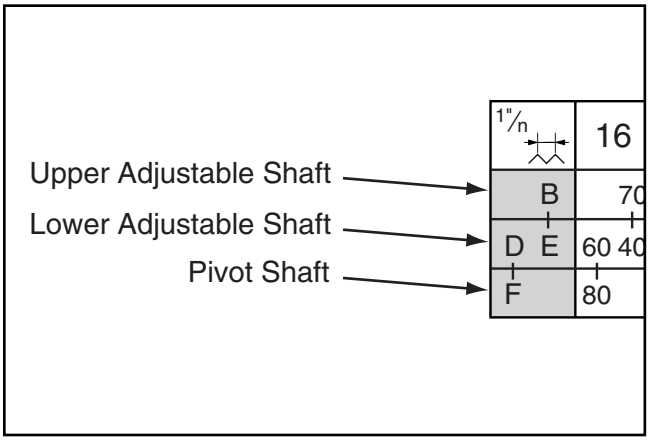


Figure 30. The shaded boxes show the thread pitches listed on this chart.

4. Each shaft has room for two positions to mount the gears—a forward position and a rear position. **Figure 31** separates these positions into different shades for you to understand better.

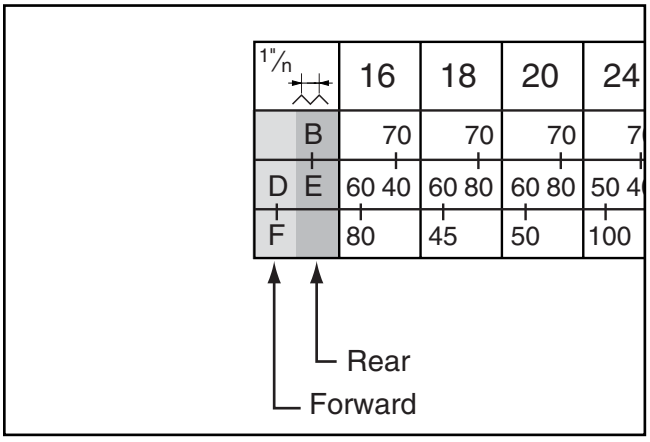


Figure 31. The shaded boxes show the thread pitches listed on this chart.

Both forward and rear positions must be filled on the shaft in order for the gears to work properly. A good example of this is the blank spot to the right of gear "F," as shown in the chart in **Figure 31**. Although the chart shows this as a blank spot, there should actually be a spacer in this position on the machine. This spacer is not listed on the chart, because the chart only reflects ACTIVE gear positions.

NOTICE

On some setups, smaller gears must be used as spacers on the adjustable shafts.

5. The lines between gears “B” & “E” and gears “D” & “F” on the chart in **Figure 32** indicate where the gears should be in mesh.

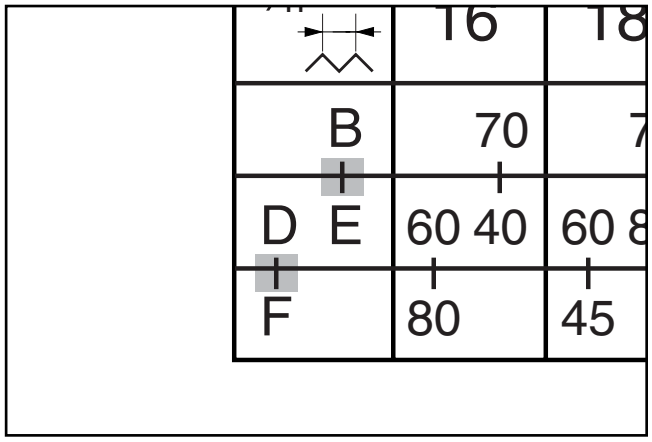


Figure 32. The shaded boxes highlight the gear mesh lines.

6. The boxes shaded in **Figure 33** represent the actual gear combinations required to cut the thread pitches.

1"/n	16	18	20	24	32	40
B	70	70	70	70	70	70
D E	60 40	60 80	60 80	50 40	45 80	30 40
F	80	45	50	100	60	100

Figure 33. The shaded boxes show specific gear setups.

Here is a real-world example of a gear setup as shown on the chart:

When the lathe/mill is shipped from the factory, it is geared for a carriage feed rate of .005" per spindle revolution, or the gear combination shaded in **Figure 34**.

"/n	0.005"	0.010"
C B	35 80	50 80
D E	90 30	66 30
F	100	100

Figure 34. Chart showing gear setup for .005".

Figure 35 shows a profile of the .005" feed rate actual gear setup on the machine. Notice how the gears mesh together in the locations displayed on the chart.

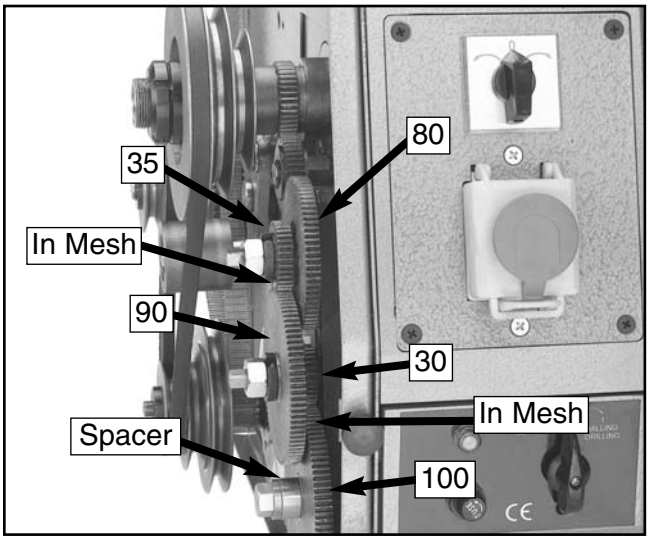


Figure 35. Actual gear setup for .005" feed rate.

Changing Gears For Carriage Feed Rate

To learn how to change gears, change the current gear setup to the .010" feed rate that is shaded in **Figure 36**.

"/n	0.005"	0.010"
C B	35 80	50 80
D E	90 30	66 30
F	100	100

Figure 36. .010" feed rate setup (shaded).

To change the carriage feed rate to .010" per spindle revolution:

1. **Disconnect the lathe/mill from the power source!**

2. Loosen the knurled knob shown in **Figure 37**, and open the drive cover.

Figure 37. Knurled drive cover knob.

3. Hold the adjustable shaft in place with the shaft wrench and use a 19mm wrench to remove the hex nuts on the upper and lower adjustable shafts as shown in **Figure 38**.

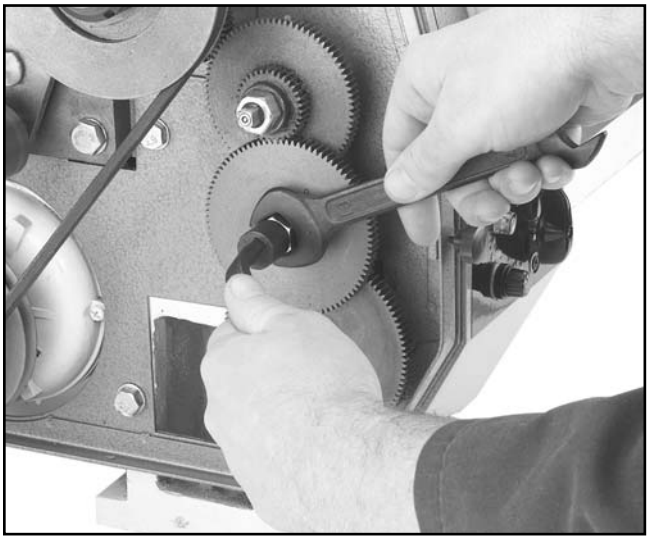


Figure 39. Removing hex nuts from adjustable shafts with a 19mm wrench.

4. Slide the special lock washer off of each adjustable shaft as shown in **Figure 40**.

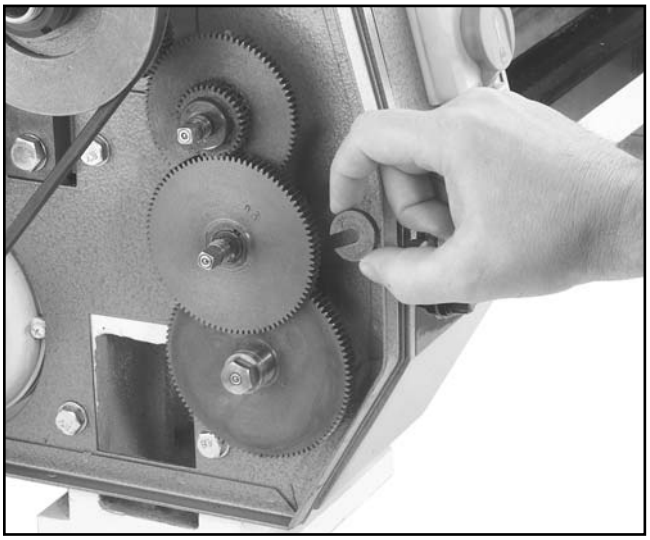


Figure 40. Removing special lock washers from adjustable shaft.

5. Use the shaft wrench to loosen the upper and lower adjustable shafts, as shown in **Figure 41**. DO NOT loosen them too much or the clamp nut will fall out and you will have to remove the gear bracket to reconnect the adjustable shaft to the clamp nut.

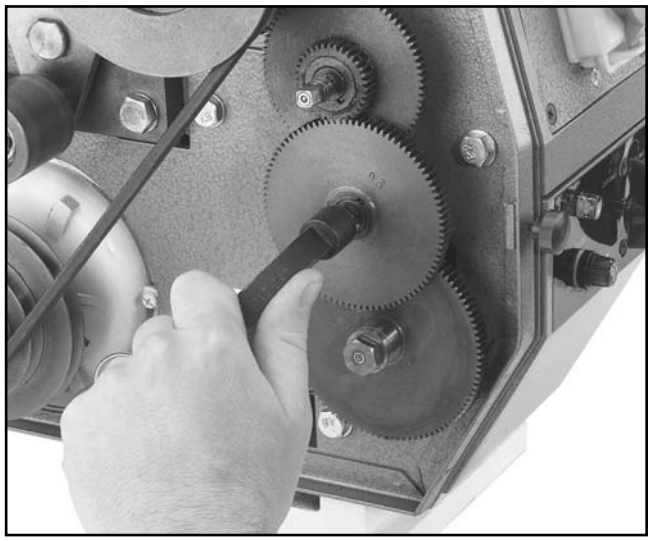


Figure 41. Using shaft wrench to loosen adjustable shafts.

6. Loosen the cap screw on the gear bracket with the 5mm allen wrench as shown in **Figure 42**.

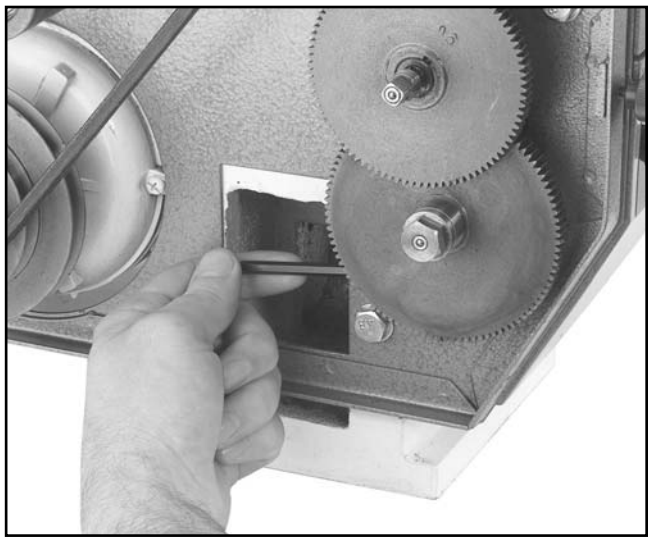


Figure 42. Loosening gear bracket cap screw.

7. Pivot the gear bracket away from the drive gear as shown in **Figure 43**.

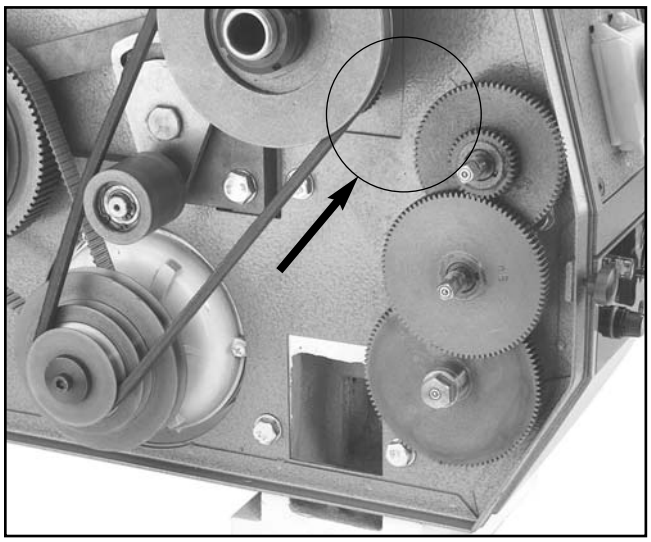


Figure 43. Gear bracket pivoted away.

8. Slide the gears on the upper adjustable shaft to the top of the gear bracket, and hand tighten the shaft to keep it from meshing with the gears on the lower shaft.

9. Remove the 35T and 90T gears (those in the forward position on each adjustable shaft).

10. Place the 50T gear on the upper adjustable shaft and place the 66T gear on the lower adjustable shaft. *Note—when placing the gear on the lower adjustable shaft, slide it up or down to make it mesh with the gear on the pivot shaft.*

11. Place the special lock washers on each adjustable shaft to ensure the gears are completely in place.

12. Thread the hex nuts back onto the shafts, and hold the shaft in place with the shaft wrench as you tighten the hex nut.

13. Loosen the upper shaft to allow the gears to slide down the gear bracket and mesh with the middle set of gears.

14. Pivot the gear bracket toward the drive gear so all the intended gears are in mesh.

15. Tighten the adjustable shafts and the gear bracket cap screw. At this point, all gears should not be able to move out of position.

16. Turn the the chuck by hand to make sure that all the gears turn smoothly.

17. Replace the drive cover and secure it with the knurled knobs.

18. Test run the lathe to make sure it works properly before continuing with your specific operation.

Reverse Threading

The Model G0516 can be setup to turn left-handed threads by adding another fixed-shaft gear and moving the original fixed-shaft gear to another mounting location. **Figure 44** shows the three mounting locations for fixed-shaft gears (spindle drive pulley is removed for clarity). For illustration purposes, we label these mounting positions A, B & C.

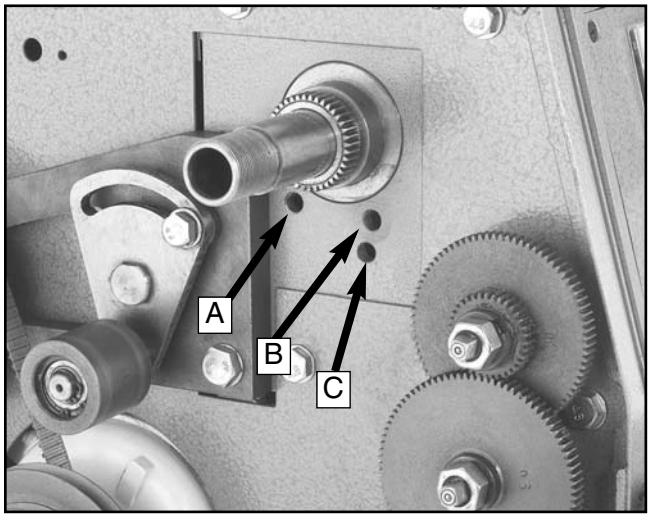


Figure 44. Fixed-shaft gear mounting positions.

To set up the gears for reverse threading:

1. Disconnect the lathe/mill from the power source!

2. Locate the extra fixed-shaft gear (shown in **Figure 45**) in your inventory of loose parts.

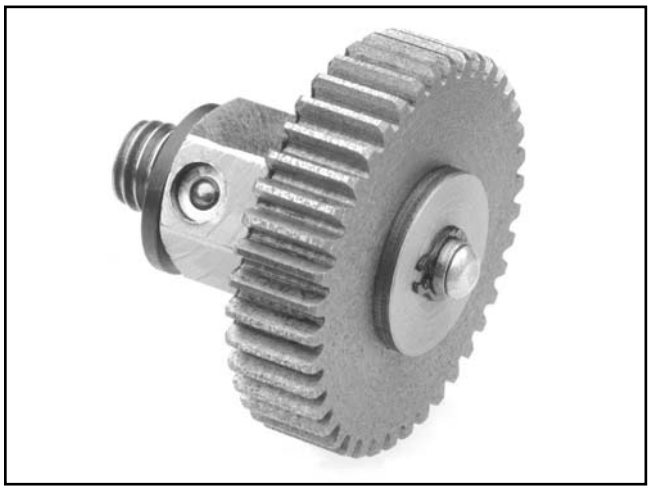


Figure 45. Extra fixed-shaft gear.

3. Thread the extra fixed-shaft gear into mounting location “A” as shown in **Figure 46**.

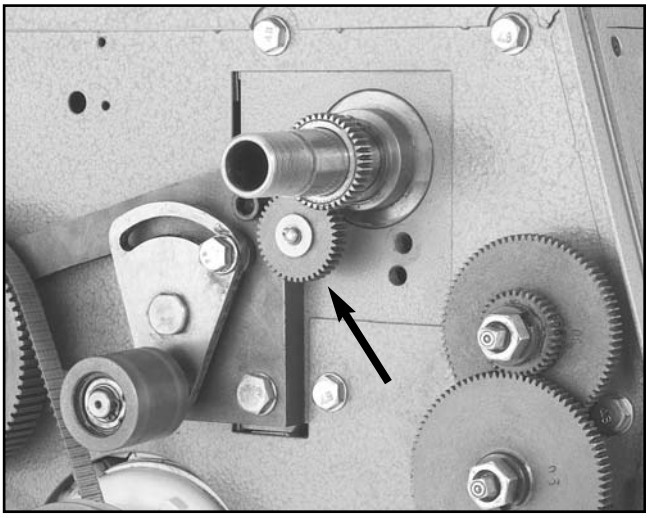


Figure 46. Extra fixed-shaft gear mounted in position “A.”

4. When the machine is shipped, a fixed-shaft gear is in position “C.” Remove that fixed-shaft gear from mounting location “C” and thread it into mounting location “B” as shown in **Figure 47**.

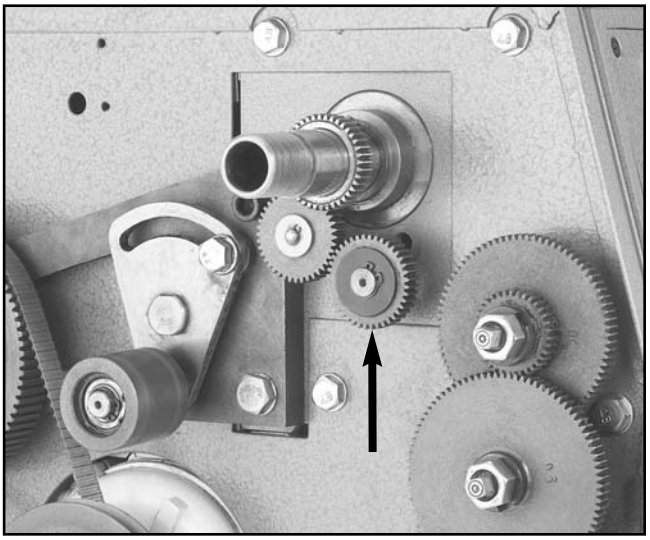


Figure 47. Fixed-shaft gear mounted in position “B.”

5. Loosen the cap screw on the gear bracket, and pivot the bracket so the top gear meshes with the fixed-shaft gear that is in position “B,” as shown in **Figure 48**.

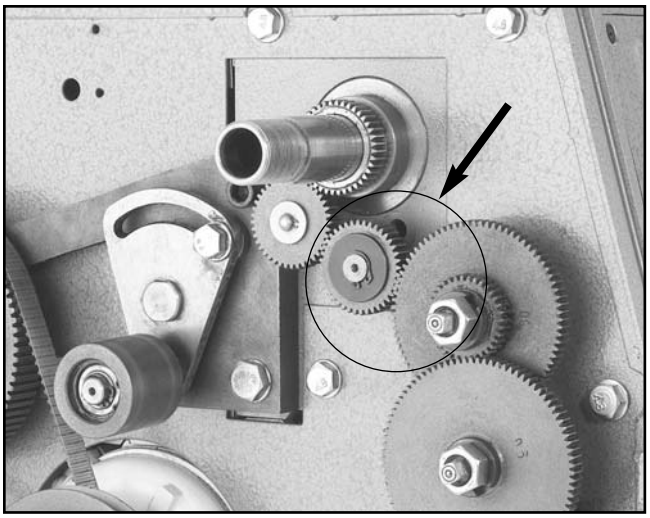


Figure 48. All gears in mesh for reverse threading operations.

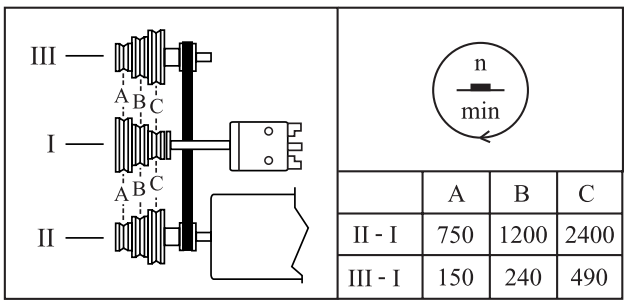
6. Tighten the cap screw in the gear bracket to keep it from pivoting.

7. Spin the lathe chuck by hand to ensure that the gears do not bind.

8. Replace the cover and test run the machine before proceeding with your specific operation.

Changing Speeds

The Model G0516 features 6 speeds—150, 240, 490, 750, 1200 & 2400 RPM. These speeds can be changed by positioning the V-belt in different sheaves on the drive pulleys, as illustrated in the speed change chart on the machine label or in **Figure 49**.



	A	B	C
II - I	750	1200	2400
III - I	150	240	490

Figure 49. Speed change chart.

To change the belt position on the pulleys:

1. **Disconnect the lathe/mill from the power source!**
2. Remove the drive belt cover.
3. Loosen the bolt on the tensioner bracket (shown in **Figure 50**) with a 19mm wrench.

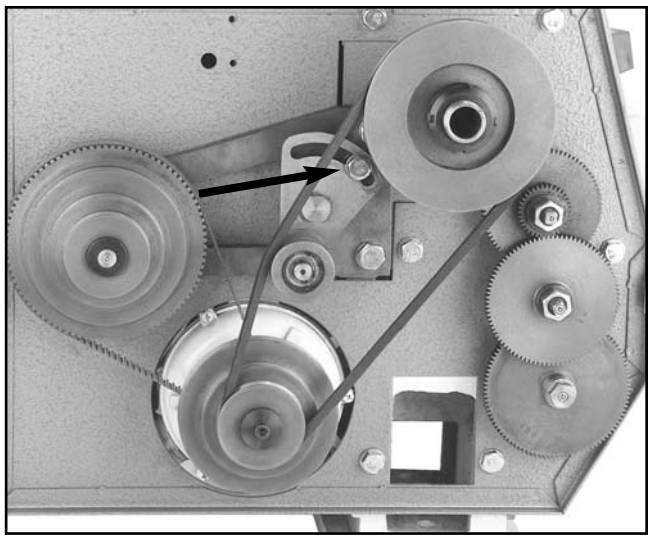


Figure 50. Tensioner adjustment bolt.

4. Move the pulley bracket away from the belt.
5. Position the belt into the pulley sheaves that dictate the speed required for your operation.
6. Move the pulley bracket into the belt and tension it until there is about ½" deflection on the side of the belt that is opposite of where the tensioner is making contact. **Figure 51** shows how to check for proper tension by using a ruler and your thumb. *Note—only moderate pressure is needed to check belt tension!*

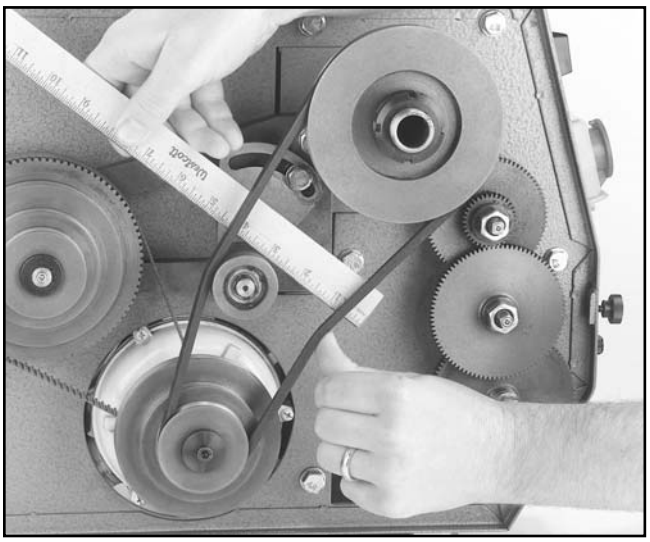


Figure 51. Checking for proper V-belt tension.

7. Replace the drive belt cover.

⚠CAUTION

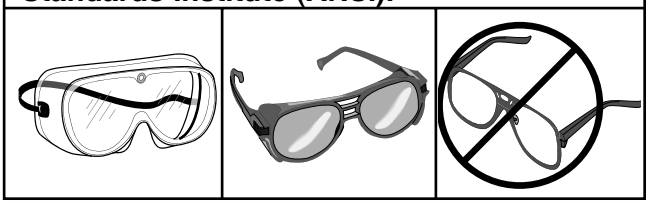
Some threading operations may damage the lead screw if performed at high speeds. Always use the slowest speed possible for your particular operation!

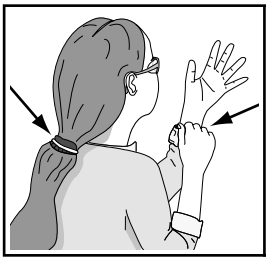
SECTION 7: MILL/DRILL OPERATIONS

Your safety is important! Please follow the warnings below during this entire section:

⚠WARNING

Operating this equipment has the potential for flying debris to cause eye injury. Always wear safety glasses or goggles when operating equipment. Everyday glasses or reading glasses only have impact resistant lenses, they are not safety glasses. Be certain the safety glasses you wear meet the appropriate standards of the American National Standards Institute (ANSI).





⚠WARNING

Keep loose clothing out of the way of machinery and keep hair pulled back during operations.

⚠WARNING

Never leave a chuck key in the chuck when it is not in use. If the machine is accidentally started, the chuck key can become a projectile and cause serious personal injury.

NOTICE

The following section was designed to give instructions on how to prepare the various items of your *MILL/DRILL* during operation procedures; however, this section is in no way designed to instruct on milling/drilling techniques or machining skills. WE STRONGLY RECOMMEND that you read books, trade magazines, or get formal training to gain the skills needed for the operation of the mill/drill portion of your machine.

Mill/Drill

To get the most out of your machine, please take the time to familiarize yourself with the various controls and components of the mill/drill, as shown in **Figures 52** and **53**.

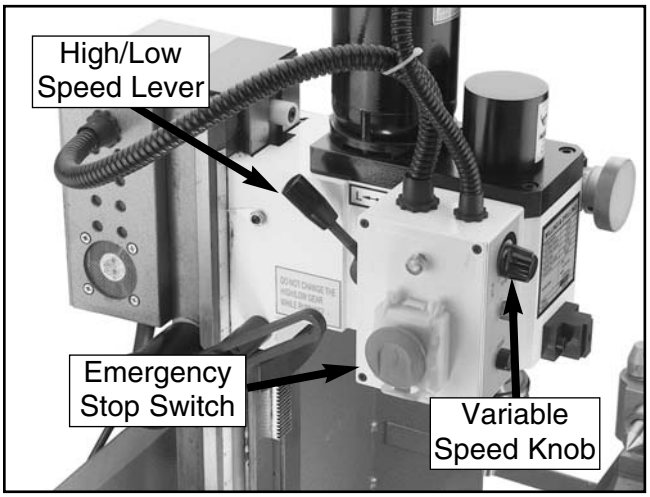


Figure 52. Mill/drill controls.

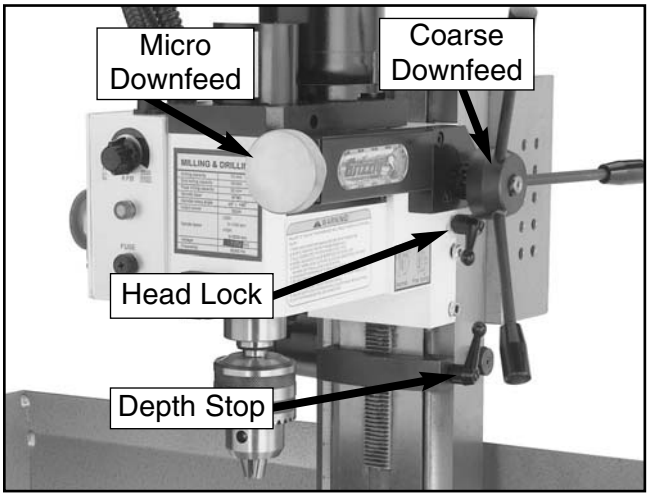


Figure 53. Mill/drill controls.

NOTICE

The hub on the coarse downfeed handwheel must be engaged to use the micro downfeed knob.

Changing Chucks

The drill chuck can be removed and replaced with an optional collet chuck when switching to milling operations.

To change chucks in the mill/drill:

1. **Disconnect the lathe/mill from the power source!**

2. Remove the mill/drill spindle cap as shown in **Figure 54**. *Note—if you cannot remove the cap off by pulling on it, give it a sideways bump with your hand.*

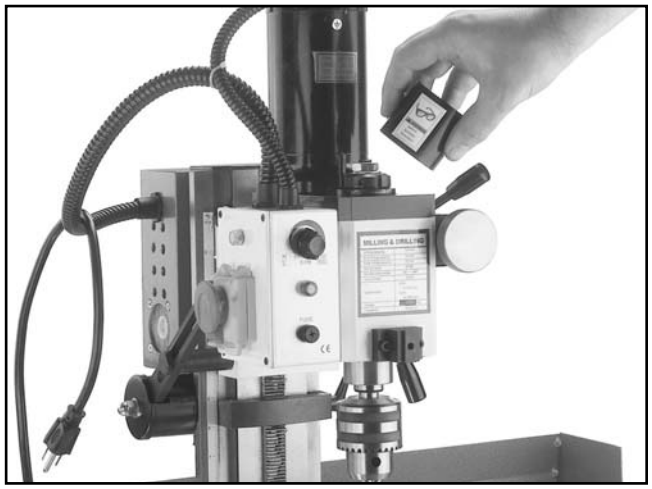


Figure 54. Removing mill/drill spindle cap.

3. Use a 19mm wrench, as shown in **Figure 55**, to remove the spindle draw nut.

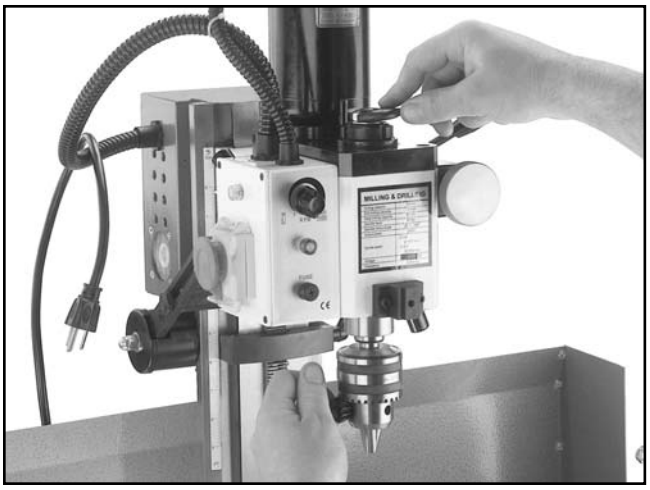


Figure 55. Removing mill/drill spindle lock nut.

4. Thread the draw nut up so it is flush with the top of the draw bolt.

5. Using a brass or wood hammer, tap the end of the draw nut as shown in **Figure 56**. The drill chuck should now become loose in the spindle.

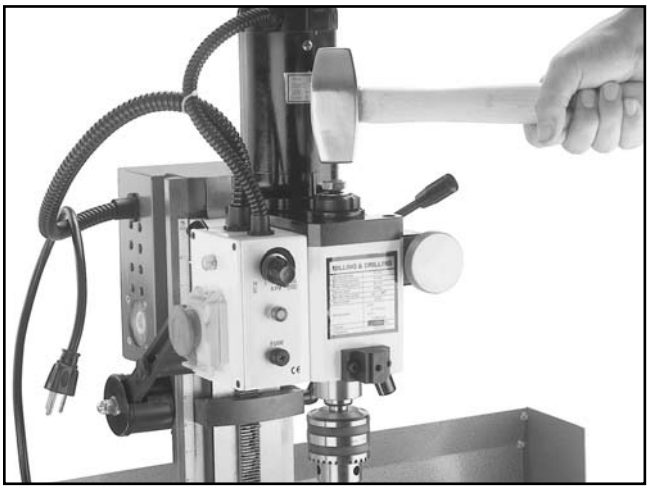


Figure 56. Tapping draw bolt loose with hammer.

6. Hold the drill chuck with one hand and remove the draw nut and washer with the other hand. The drill chuck should now be easily removed from the bottom as shown in **Figure 57**.

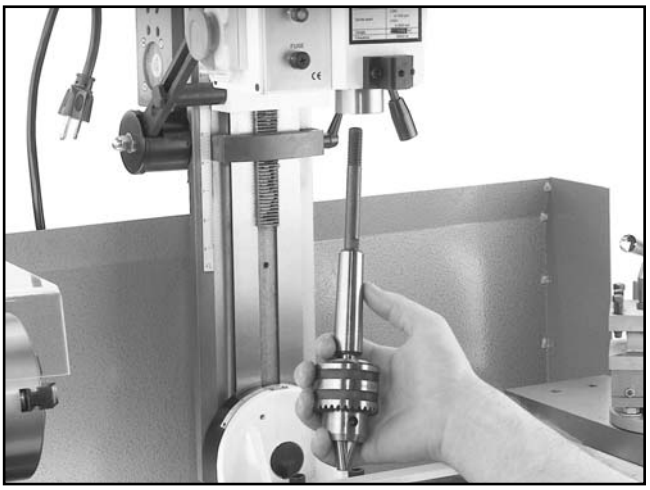


Figure 57. Removing drill chuck from spindle.

7. Remove the draw bolt from the drill chuck arbor and thread it into the mill arbor. *Note—use the flats on the draw bolt to loosen or tighten it in the arbors.*

8. Firmly insert your collet chuck into the spindle taper.

9. Insert the flat washer and thread the hex nut onto the end of the draw bolt.

10. Hold the collet chuck in place with the spanner wrench and tighten the hex nut on the draw bolt just enough to snug it in place. See **Figure 58**. DO NOT tighten the hex nut too tight or the collet chuck will be hard to remove from the spindle taper.

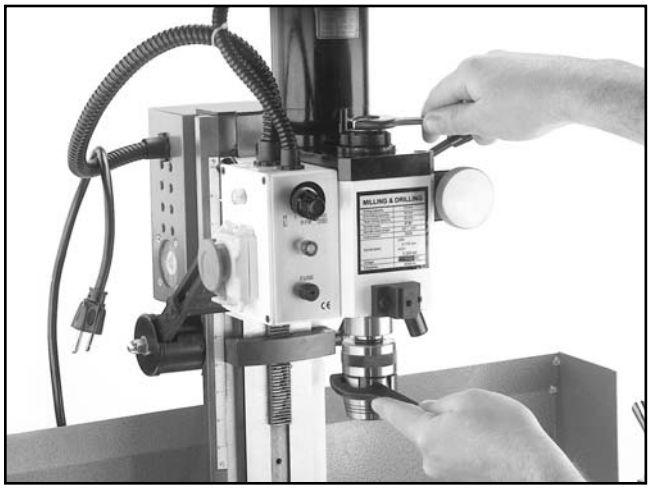


Figure 58. Installing optional collet chuck.

Installing Mill Table

The Model G0516 includes a milling table as an accessory. When the Model G0516 is shipped from the factory, the compound slide is mounted on the cross slide and must be removed before the milling table can be installed. Once installed, the milling table moves back and forth with the cross slide.

To install the mill table:

1. Use a 12mm wrench to remove the two bolts that secure the compound slide to the cross slide. See **Figure 59**.

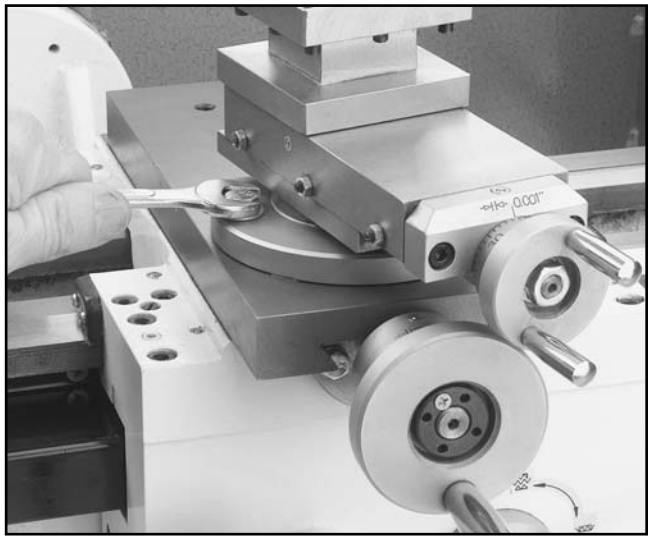


Figure 59. Removing compound slide bolts.

2. Remove the compound slide from the cross slide.

3. Place the milling table on the cross slide so the mounting bolts line up with the threaded holes.

4. Secure the milling table to the cross slide, using a 6mm allen wrench with the table mounting cap screws. **Figure 60** shows the milling table installed on the cross slide.

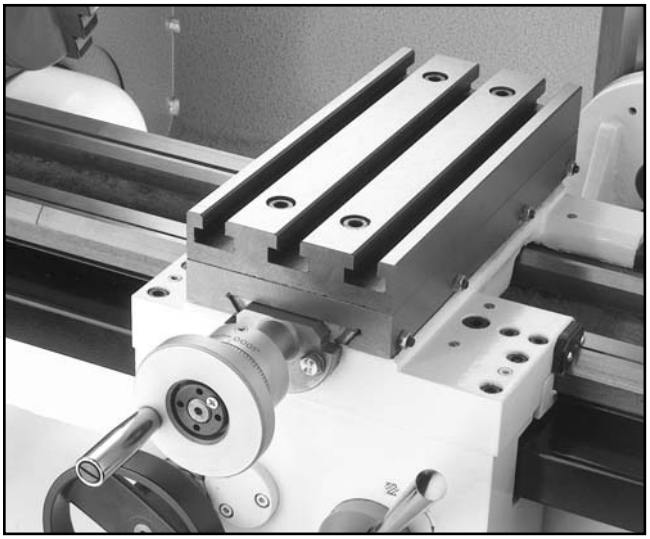
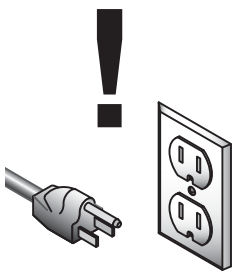


Figure 60. Mill table installed on cross slide.

SECTION 8: MAINTENANCE



⚠WARNING

Disconnect power to the machine when performing any adjustments or maintenance. Failure to do this may result in serious personal injury.

Lubrication

For lubricating your machine, we recommend that you use a manual oiler (oil can) filled with ISO 68 or SAE 20W non-detergent oil or similar lubricant.

Ball fittings—Shown in **Figure 61**, ball fittings are responsible for the majority of the machine lubrication. To lubricate ball fittings, depress the ball with the tip of the oil can nozzle and squirt a little oil inside the fitting. Make sure to clean the outside of the ball fitting before and after each use to keep out contaminants.

Figure 61. Lubrication ball fittings.

Ball Fitting Lubrication Points—Lubricate the following areas every 8 hours of actual use:

1. Left Leadscrew Support
2. Compound Slide
3. Compound Slide Leadscrew
4. Tailstock Barrel
5. Tailstock Leadscrew
6. Right Leadscrew Support

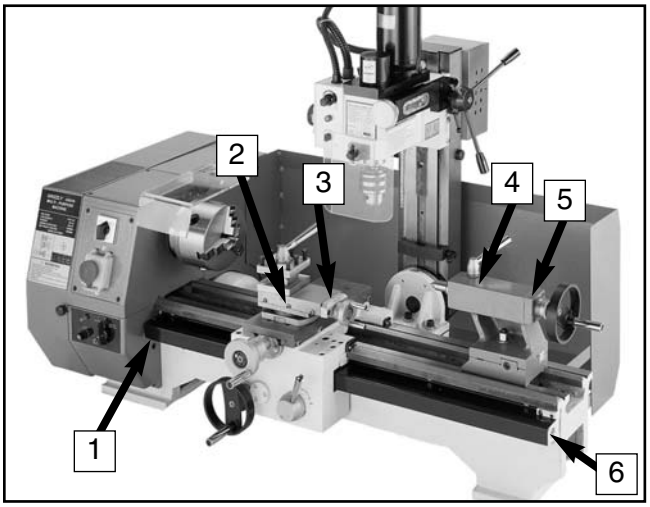


Figure 62. Ball fitting lubrication points.

7. Fixed-Shaft Gear
8. Synchronized Counter Pulley
9. Upper Adjustable Shaft
10. Lower Adjustable Shaft
11. Pivot Shaft

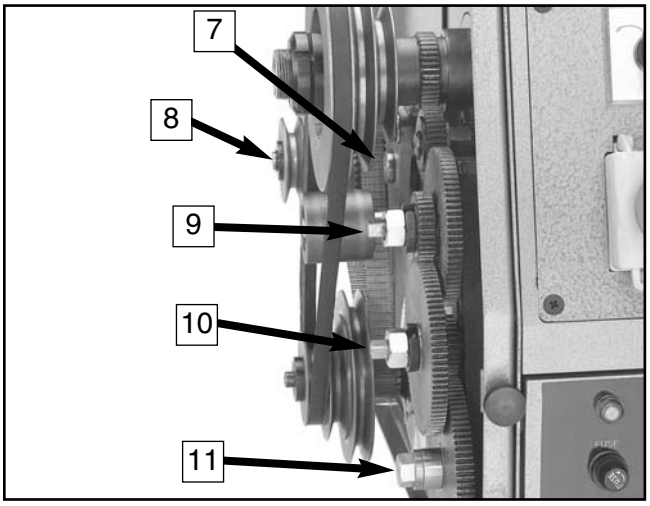


Figure 63. Ball fitting lubrication points.

12. Bed Guide
13. Cross Slide Leadscrew
14. Bed Guide
15. Bed Guide
16. Apron
17. Cross Slide Leadscrew Support
18. Apron
19. Bed Guide
20. Bed Guide
21. Bed Guide

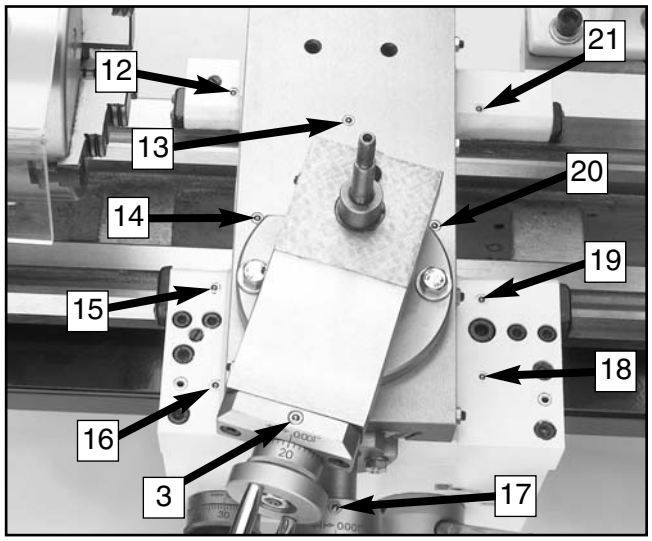


Figure 64. Ball fitting lubrication points.

Gears—Apply a minimal amount of oil to the teeth of the end gears after assembly and each 8 hours of actual use. Avoid getting oil on the belt or pulleys when lubricating. Also, regularly apply lubrication to all the ball fittings drive box.

Long Leadscrew—Apply a minimal amount directly on the rack every 8 hours of actual use.

Carriage Rack—Apply a minimal amount directly on the rack every 8 hours of actual use.

Mill/Drill Rack & Pinion—Apply a minimal amount directly on the rack every 8 hours of actual use.

Checking V-Belt

To ensure optimum power transmission from the motor, the V-belts must be in good condition and must operate under proper tension. The belts should be checked for cracks, fraying, and wear at least every 3 months—more often if the machine is used daily.

The check the V-belt:

1. **Unplug the lathe/mill from its power source!**

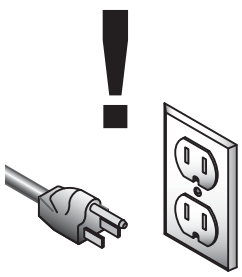
2. Open the drive cover.

3. Note the condition of the V-belt. If the V-belt is cracked, frayed, or glazed; it should be replaced.

Maintenance Log

Date	Approximate Hours Of Use	Maintenance Performed

SECTION 9: SERVICE ADJUSTMENTS



⚠WARNING
Disconnect power to the machine when performing any adjustments or maintenance. Failure to do this may result in serious personal injury.

About Service

This section is designed to help the operator with adjustments that were made at the factory and might also need to be made during the life of the machine.

This section is provided for your convenience—it is not a substitute for the Grizzly Service Department. If any adjustments arise that are not described in this manual, then feel free to call the Grizzly Service Department.

Similarly, if you are unsure of how to perform any procedure in this section, the Grizzly Service Department will be happy to guide you through the procedures or help in any other way.

Gibs

There are four gib adjustments for the Model G0516—the cross-slide gib, the compound slide gib, the apron gib, and the mill/drill downfeed gib.

NOTICE
When adjusting gibs, keep in mind that the goal of gib adjustment is to remove unnecessary sloppiness without causing the slides to bind. Loose gibs may cause poor finishes on the workpiece and may cause undue wear on the slide. Over-tightening may cause premature wear on the slide, leadscrew and nut.

Cross-slide Gib—The gib on the cross-slide is adjusted by tightening or loosening the 4 gib screws located on the right-hand side of the slide. See **Figure 65**. Before adjusting the gib screws, loosen their jam nuts.

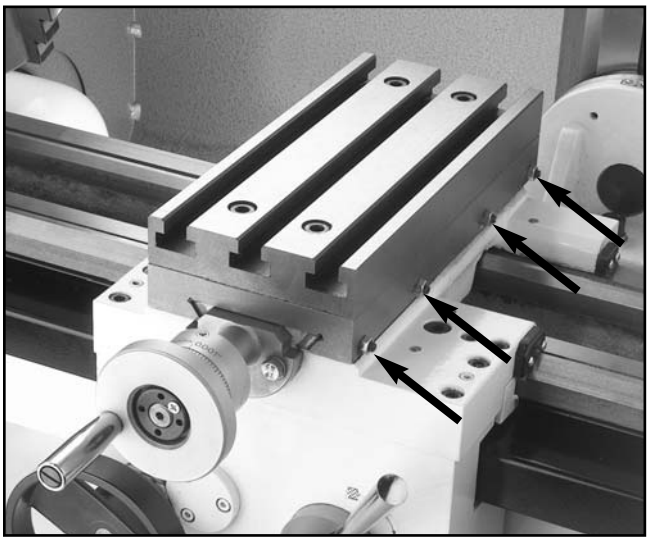


Figure 65. Cross slide gib screws.

The gib is held in place by the setscrews. *DO NOT overtighten.* The gib is properly adjusted when a slight drag is detected while turning the hand crank. This drag should be evenly distributed among the 4 setscrews, so adjust each screw until a slight drag is detected while the hand crank is turned.

Compound Gib—The gib on the compound has 3 screws that maintain tension on the slide. These screws are held in place with retaining nuts. To adjust, loosen the retaining nuts and then tighten the screws as needed. When proper tension has been detected by turning the hand crank on the compound, tighten the retaining nuts while maintaining the position of the screw with an Allen® wrench as in **Figure 66.**

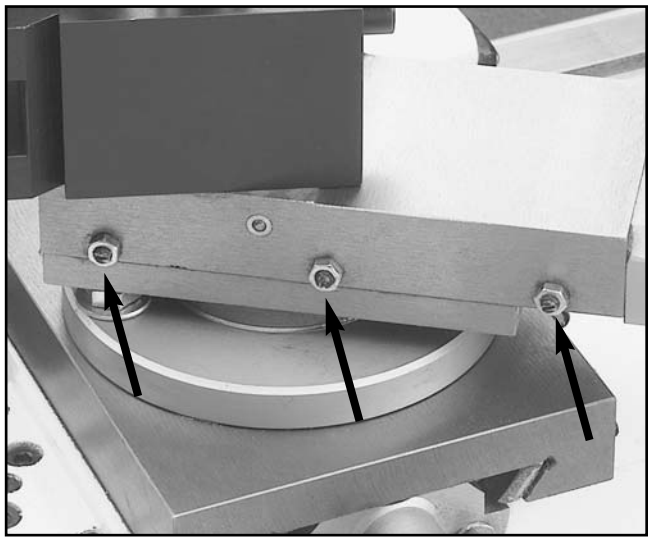


Figure 66. Compound slide gib screws.

Saddle Gibs—There are 4 tensioning screws for both the front and rear saddle gibs. Before making adjustments to the saddle gib, ensure that the front lock lever is loose by turning it counterclockwise. **See Figures 67 & 68.** It is important the screws are tightened evenly. A slight drag should be detected while turning the hand crank at the end of the lathe.

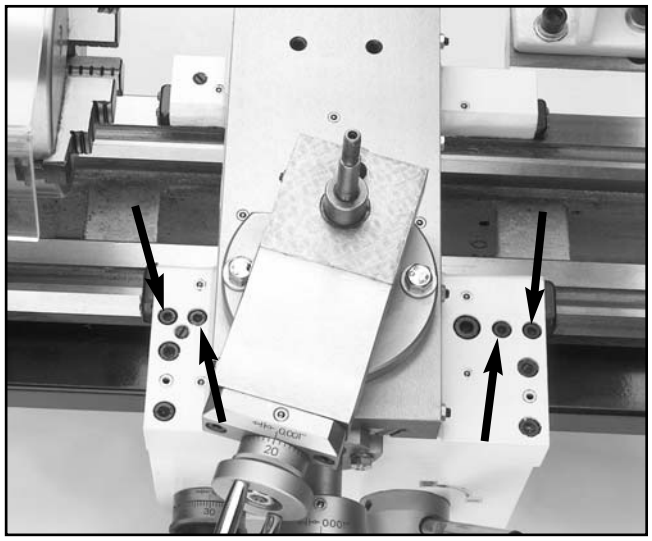


Figure 67. Front saddle gib screws.

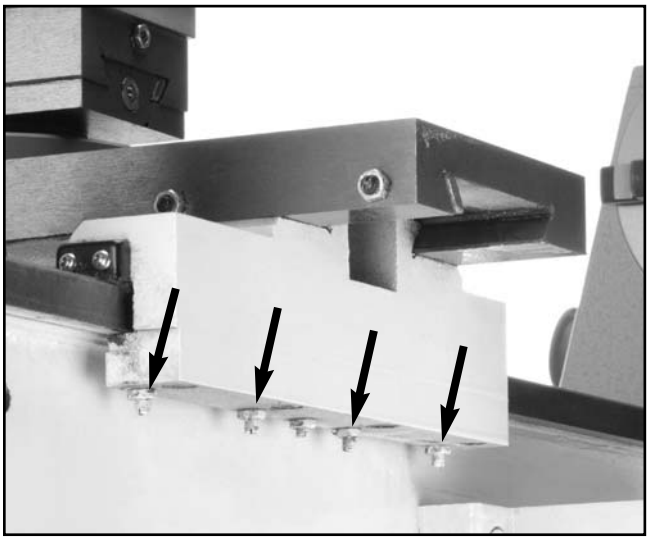


Figure 68. Rear saddle gib screws.

Mill/Drill Gib—There are 4 screws that tension the mill/drill gib. See **Figure 69.** It is important that the screws are tightened evenly. A slight drag should be detected while turning the coarse downfeed handwheel.

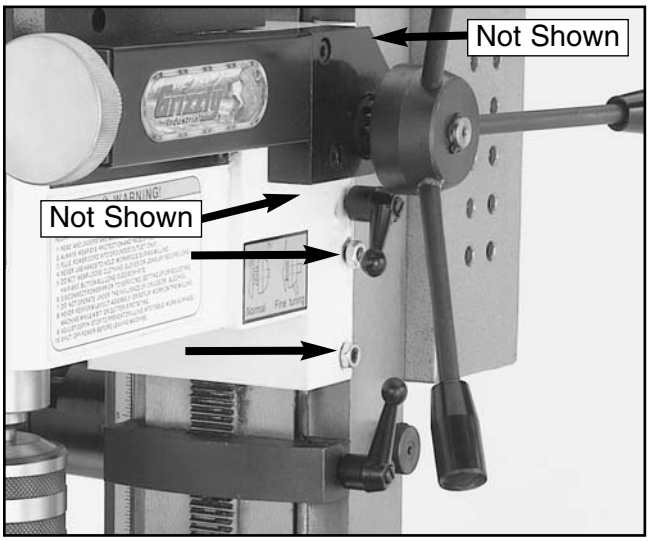


Figure 69. Mill/drill gib screws.

Aligning Tailstock

The tailstock on the Model G0516 is aligned with the headstock at the factory. However, at times you may wish to misalign the tailstock for certain operations; then, realign it when you are finished.

To align the tailstock:

1. Center drill a 6" long piece of round cold rolled stock on both ends. Set it aside for use in **step 4.**

2. Make a dead center by turning a shoulder to make a shank, then flip the piece over in the chuck and turn a 60° point. **See Figure 70.** *Note—As long as it remains in the chuck, the point of your center will be accurate to your spindle axis. Keep in mind that the point will have to be refinished whenever it is removed and returned to the chuck.*

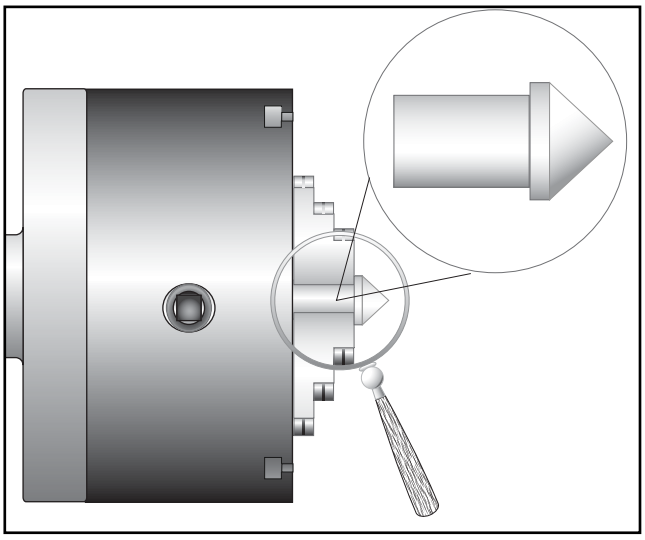


Figure 70. Finished dead center.

3. Place a center in your tailstock.

4. Attach a lathe dog to the bar stock and mount it between the centers. See **Figure 71.**

5. Turn approximately .010" off of the diameter.

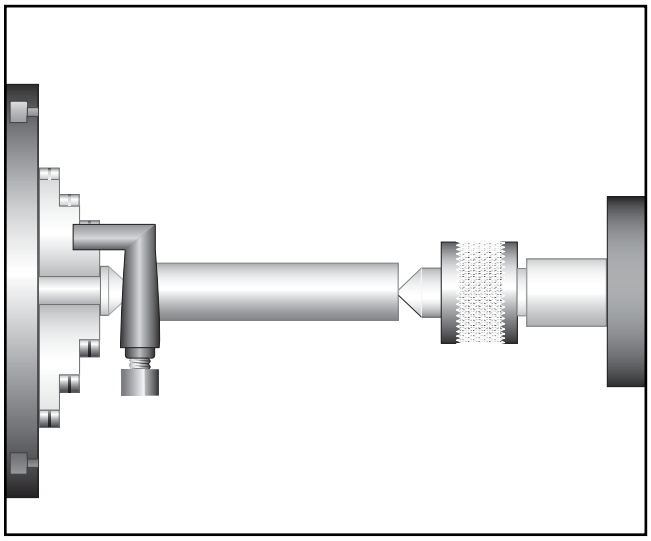


Figure 71. Bar stock mounted on centers.

NOTICE

Before making adjustments to the tailstock, mount a dial indictor so that the dial plunger is on the tailstock barrel. **See Figure 72.**

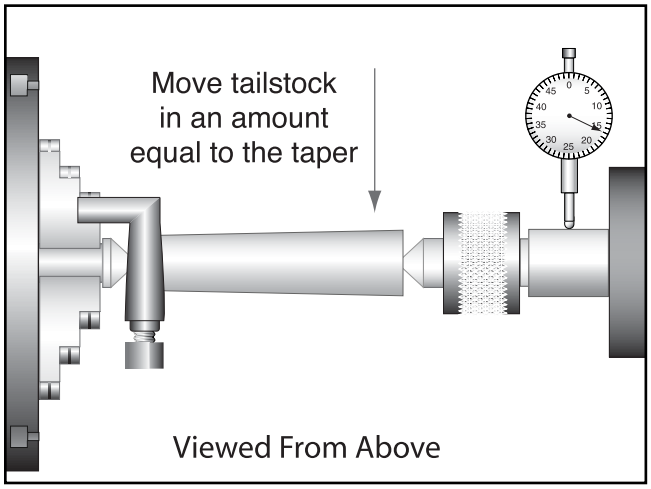


Figure 72. Adjusting for headstock end taper.

6. Measure the workpiece with a micrometer. If the stock is fat at the tailstock end, the tailstock needs to be moved toward you the amount of the taper. See **Figure 72.** If the stock is thinner at the tailstock end, the tailstock needs to be moved away from the operator by at least the amount of the taper. **See Figure 73.**

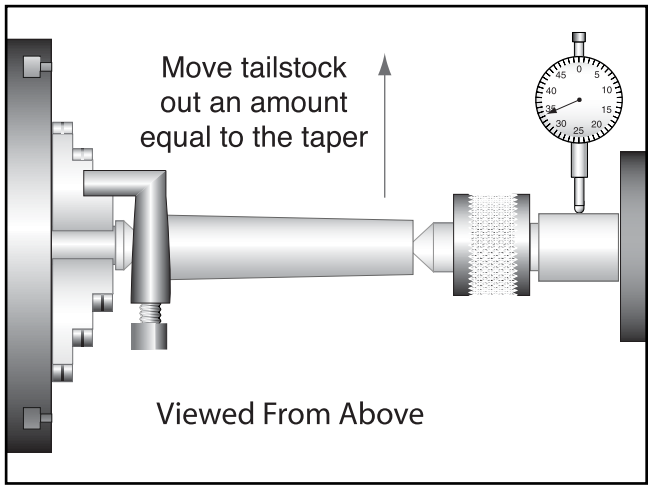


Figure 73. Adjusting for tailstock end taper.

7. Loosen the tailstock clamp nut and the lock screw shown in **Figure xx**.

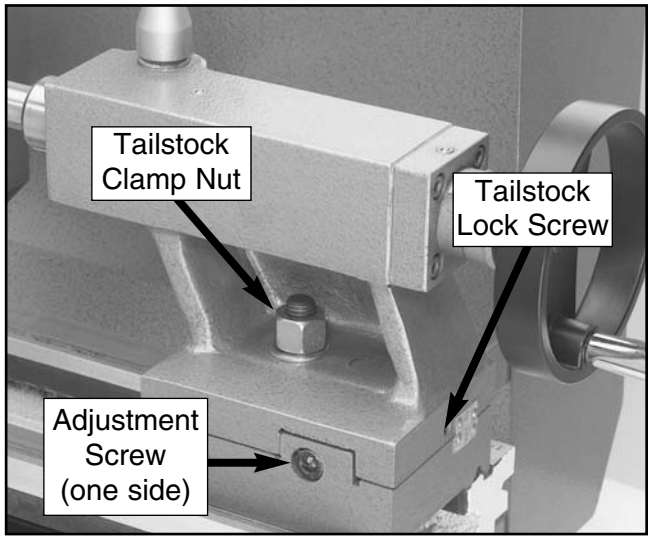


Figure 74. Tailstock offset adjustment screw.

8. Use the tailstock adjustment screws on both sides to adjust move the tailstock offset by the amount of the taper.

9. Tighten the clamp nut, lock screw and adjustment screws. Be careful not to move the tailstock out of position when tightening the adjustment screws.

10. Turn another .010" off of the stock and check for taper. Repeat **steps 7-9** as necessary until the desired amount of accuracy is achieved.

Bearing Preload

This lathe is shipped from the factory with the bearing preload already set. If the preload requires resetting for whatever reason, please contact our service department for further instructions.

Service Log

Date	Approximate Hours Of Use	Service Performed

SECTION 10: REFERENCE INFO

The following pages contain general machine data, parts diagrams, parts lists and Warranty/Return information for your Model G0516.

If you need parts or help in assembling your machine, or if you need operational information, call the Grizzly Service Department. Trained service technicians will be glad to help you.

If you have any comments regarding this manual, please write to Grizzly at the address below:

Grizzly Industrial, Inc.
c/o Technical Documentation
P.O. Box 2069
Bellingham, WA 98227-2069

We recommend you keep a copy of our current catalog for complete information regarding Grizzly's warranty and return policy. If you need additional technical information relating to this machine, or if you need general assistance or replacement parts, please contact the Service Department at the location listed below.

Grizzly Industrial, Inc.
1203 Lycoming Circle
Muncy, PA 17756
Phone: (570) 546-9663
Fax: (800) 438-5901
E-Mail: techsupport@grizzly.com
Web Site: http://www.grizzly.com.

MACHINE DATA SHEET

Customer Service #: (570) 546-9663 • To Order Call: (800) 523-4777 • Fax #: (800) 438-5901

MODEL G0516 LATHE/MILL COMBO

Design Type .....Bench Model

Overall Dimensions:

- Overall Length .....44"
- Overall Width .....23"
- Overall Height .....34"
- Bed Width ..... 5⅜"
- Spindle Bore .....¾"
- Lathe and Drill Press Tapers .....Morse #3
- Tailstock Taper .....Morse #2
- Weight (Net) .....397 lbs.
- Crate Size .....51" L x 26" W x 32" H
- Footprint .....16½" x 43"

Lathe Capacity:

- Swing Over Bed .....9¾"
- Swing Over Saddle .....6"
- Distance Between Centers .....21''
- Compound Travel .....2¼''
- Cross Slide Travel .....4¼"
- Tailstock Barrel Travel ..... ½"
- Spindle Speeds .....150, 240, 490, 750, 1200, 2400 RPM
- Feed Rate Range .....2 @ .005" - .010"
- Thread Range Inch .....8-40 TPI in 12 Steps (Gear changes required)
- Thread Range Metric .....12 @ .4-3 mm
- Leadscrew .....¾" - 10 TPI
- Cross Slide Screw .....9/16" - 12 TPI

Milling Capacity: (Measured without Drill Chuck)

- Swing .....12¾''
- Spindle to Work Table .....9½"
- Head Stock Height Adjustment ..... 8"
- Range of Speeds .....0-2500 RPM
- Drill Capacity .....½"

Lathe Motor:

- Type .....TEFC Capacitor Start Induction
- Horsepower .....¾
- Switch .....Forward/Reverse w/Emergency Stop
- Phase .....Single-Phase
- Voltage 110V
- Amps 9
- RPM 1710

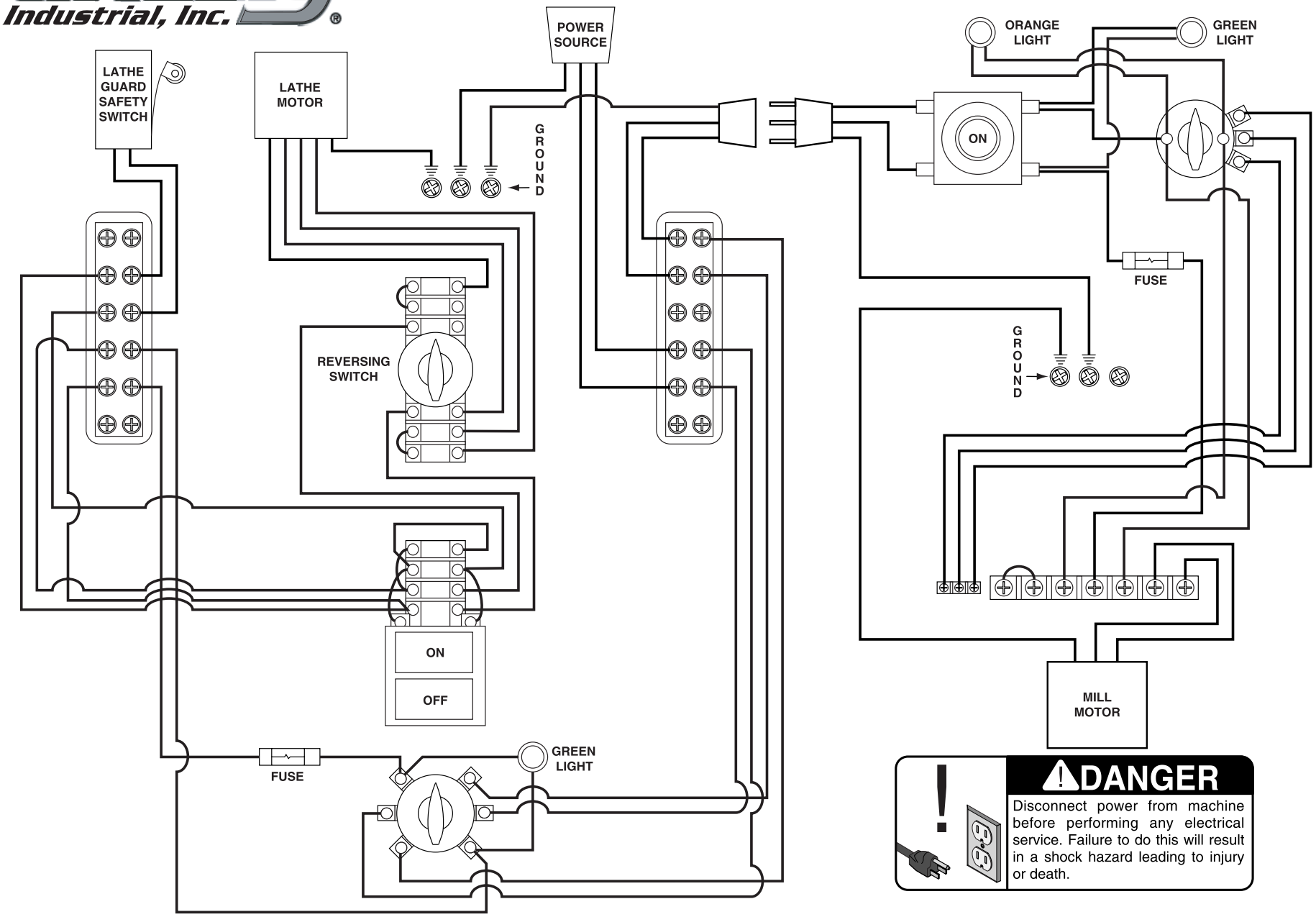
Mill Motor:

- Type .....DC Motor
- Horsepower .....⅘
- Switch .....Emergency Stop
- Phase .....Single-Phase
- Voltage 110V
- Amps 6
- Speed .....Variable, 0-2500 RPM

Features:

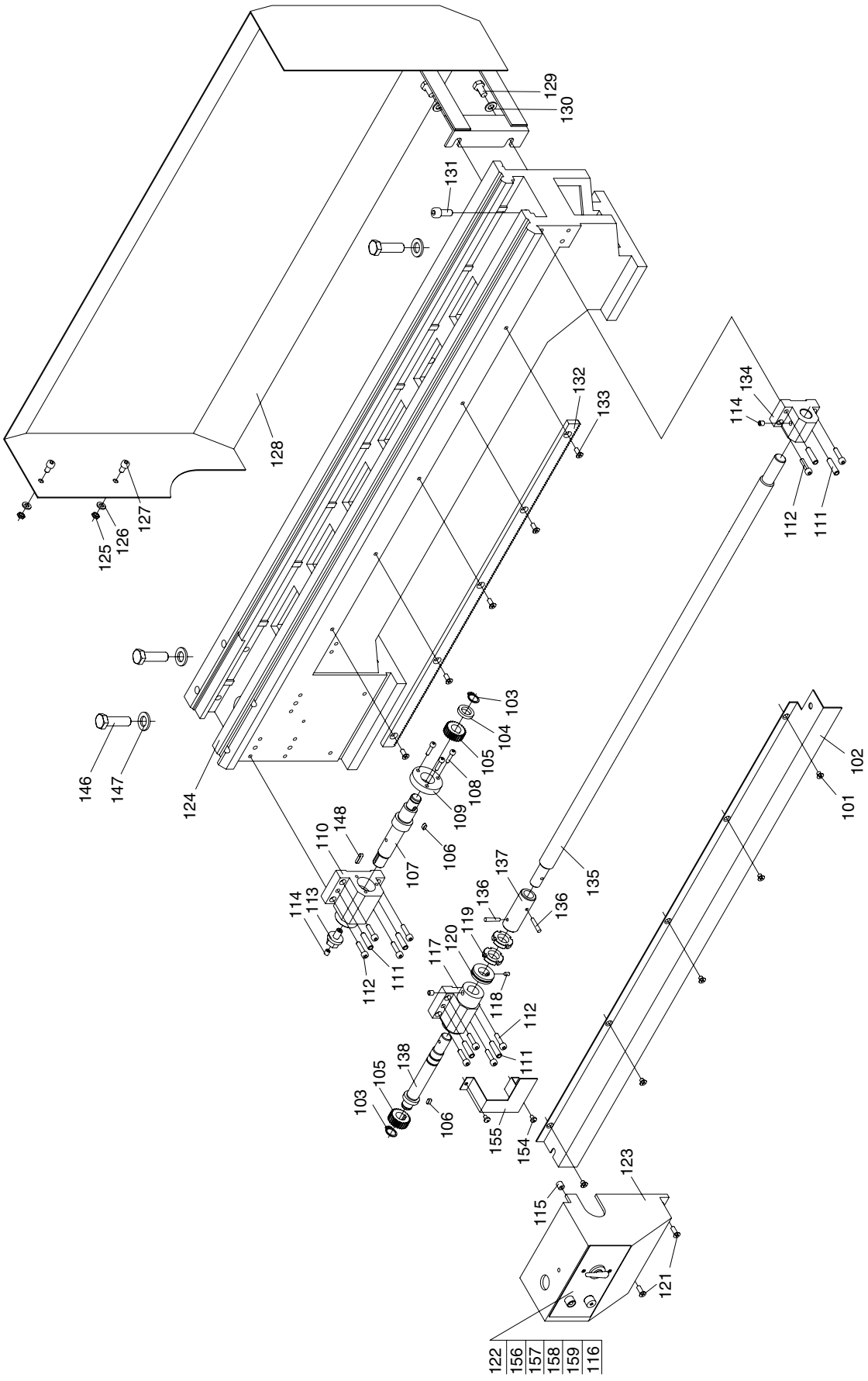
5" 3-Jaw Chuck	5" 4-Jaw Chuck
Cross Slide Table	8½" Face Plate
12 Change Gears	Quick Change Tool Post
Drill Chuck with Arbor	2 Dead Centers
Quick Change Lathe Spindle	4-Way Turret Tool Post

G0516 Lathe/Mill Combo Wiring Diagram



⚠DANGER

Disconnect power from machine before performing any electrical service. Failure to do this will result in a shock hazard leading to injury or death.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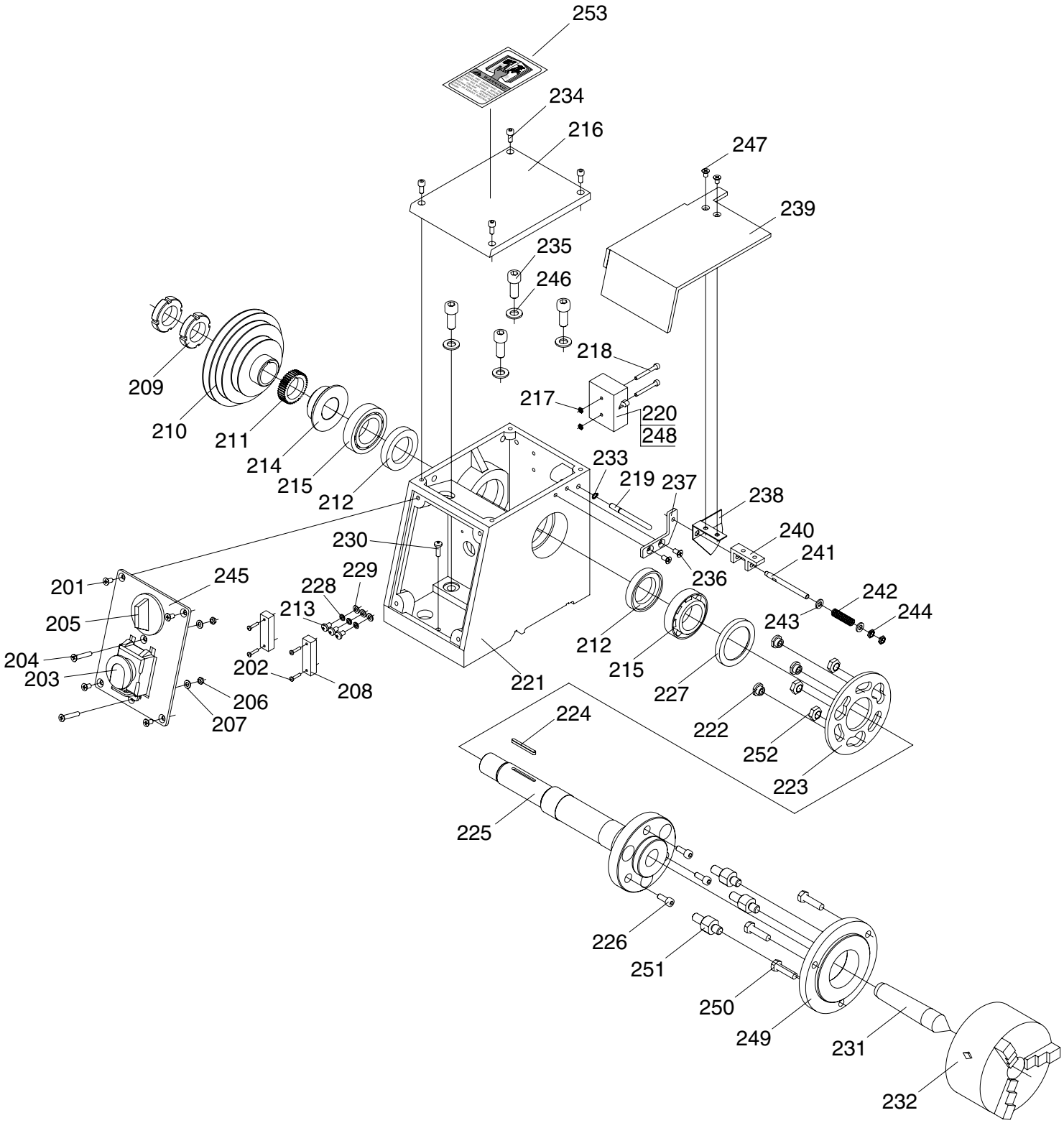
REF	PART #	DESCRIPTION
101	PS05M	PHLP HD SCR M5-.8 X 8
102	P0516102	LEADSCREW COVER
103	PR02M	EXT RETAINING RING 14MM
104	P0516104	CHANGE GEAR SPACER
105	P0516105	SMALL GEAR
106	PK04M	KEY 4 X 4 X 8
107	P0516107	CHANGE GEAR SHAFT
108	PS56M	PHLP HD SCR M4-.7 X 16
109	P0516109	ADJUSTING DISC
110	P0516110	SHAFT SUPPORT
111	P0516111	TAPER PIN 6 X 26
112	PS06M	PHLP HD SCR M5-.8 X 20
113	P0516113	BOLT (WITH SHOULDER)
114	P0516114	OIL CUP 6MM
115	P0516115	BLOCK FOR SWITCH
116	PS07M	PHLP HD SCR M4-.7 X 8
117	P0516117	LEADSCREW SUPPORT L
118	PS07M	PHLP HD SCR M4-.7 X 8
119	P0516119	ROUND NUT
120	P0516120	STEEL WASHER
121	PS57M	PHLP HD SCR M5-.8 X 14
122	P0516122	SWITCH LABEL
123	P0516123	SHAFT COVER
124	P0516124	BED
125	PN01M	HEX NUT M6-1.0
126	PW03M	FLAT WASHER 6MM
127	PB04M	HEX BOLT M6-1 X 10

REF	PART #	DESCRIPTION
128	P0516128	SPLASH GUARD
129	PS30M	PHLP SCR M8-1.25 X 15
130	PW01M	FLAT WASHER 8MM
131	PS04M	PHLP SCR M8-1.25 X 20
132	P0516132	RACK
133	PS08M	PHLP HD SCR M5-.8 X 12
134	P0516134	LEADSCREW SUPPORT R
135	P0516135	LONG LEADSCREW
136	PRP56M	ROLL PIN 4 X 25
137	P0516137	SLEEVE JOINT
138	P0516138	JOINT SHAFT
139	PRP57M	ROLL PIN 6 X 30
140	PS58M	PHLP HD SCR M10-1.5 X 40
141	PRP57M	ROLL PIN 6 X 30
142	PS03M	PHLP HD SCR M6-1 X 8
143	P0516143	SUPPORT
144	P0516144	SUPPORT BOLT
145	P0516145	SUPPORT PLATE
146	PB35M	HEX BOLT M12-1.75 X 40
147	PW06M	FLAT WASHER 12MM
148	PK37M	KEY 4 X 4 X 16
154	PS56M	PHLP HD SCR M4-.7 X 16
155	P0516155	SMALL GEAR PROTECTOR
156	P0516156	GREEN LAMP
157	P0516157	FUSE BOX
158	P0516158	FUSE
159	P0516159	SELECTOR SWITCH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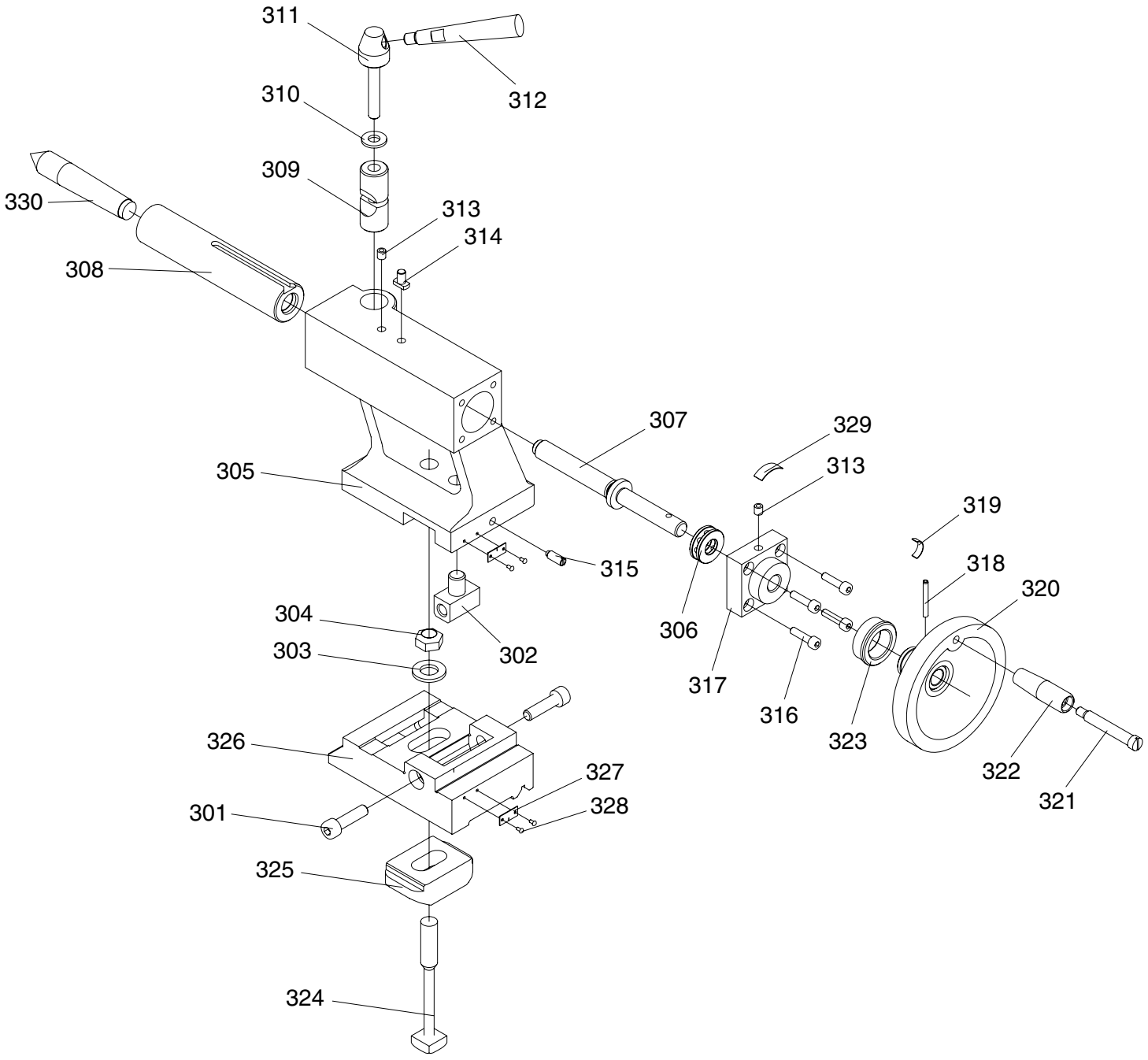
REF	PART #	DESCRIPTION
201	PS09M	PHLP HD SCR M5-.8 X 10
202	PS59M	PHLP HD SCR M3-.5 X 14
203	P0516203	POWER SWITCH W/STOP
204	PS60M	PHLP HD SCR M5-.8 X 30
205	P0516205	FWD/REV SWITCH
206	PN06M	HEX NUT M5-0.8
207	PW02M	FLAT WASHER 5MM
208	P0516208	CONNECTOR
209	P0516209	ROUND NUT M27-1.5
210	P0516210	SPINDLE PULLEY
211	P0516211	SPINDLE GEAR
212	P0516212	OIL RING
213	PS05M	PHLP HD SCR M5-.8 X 8
214	P0516214	SPINDLE SPACER
215	P32007	BEARING 32007
216	P0516216	SPINDLE BOX COVER
217	PN04M	HEX NUT M4-0.7
218	PS25M	PHLP HD SCR M4-.7 X 35
219	P0516219	PIN SHAFT
220	P0516220	BOX FOR MICRO SWITCH
221	P0516221	HEAD STOCK BODY
222	P0516222	FIXING NUT
223	P0516223	ROTATABLE SPACER
224	PK68M	KEY 4 X 4 X 40
225	P0516225	SPINDLE
226	PS11M	PHLP HD SCR M6-1 X 16
227	P0516227	FRONT BEARING COVER

REF	PART #	DESCRIPTION
228	PLW01M	LOCK WASHER 5MM
229	PTLW02M	EXT TOOTH WASHER M5
230	PS40M	PHLP HD SCR M5-0.8 X 16
231	P0516231	SPINDLE CENTER MT3
232	P0516232	3-JAW CHUCK D-125MM
233	PR04M	EXT RETAINING RING 6MM
234	PS08M	PHLP HD SCR M5-.8 X 12
235	PS41M	PHLP SCR M10-1.5 X 25
236	PS09M	PHLP HD SCR M5-.8 X 10
237	P0516237	SUPPORT
238	P0516238	LIMIT BLOCK
239	P0516239	CHUCK GUARD
240	P0516240	FIXING SUPPORT
241	P0516241	SMALL SHAFT
242	P0516242	COMPRESS SPRING
243	PW03M	FLAT WASHER 6MM
244	PN01M	HEX NUT M6-1.0
245	P0516245	PLATE FOR SWITCHES
246	PW04M	FLAT WASHER 10MM
247	PS05M	PHLP HD SCR M5-.8 X 8
248	P0516248	MICROSWITCH
249	P0516249	3-JAW CHUCK FLANGE
250	P0516250	HEX BOLT M8-1.25 X 30
251	P0516251	PLUG BOLT
252	PN02M	HEX NUT M10-1.5
253	PLABEL-12	READ MANUAL LABEL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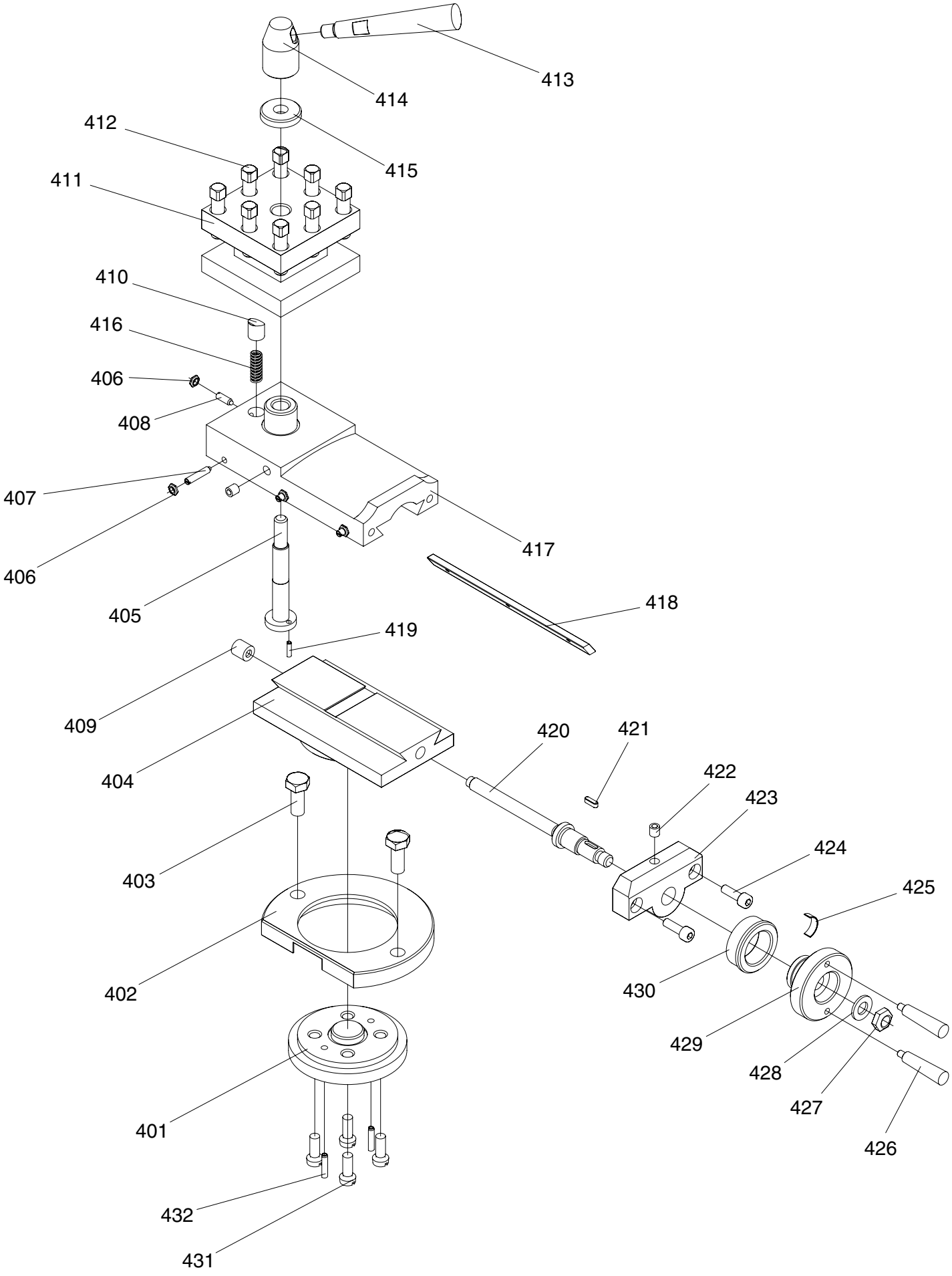
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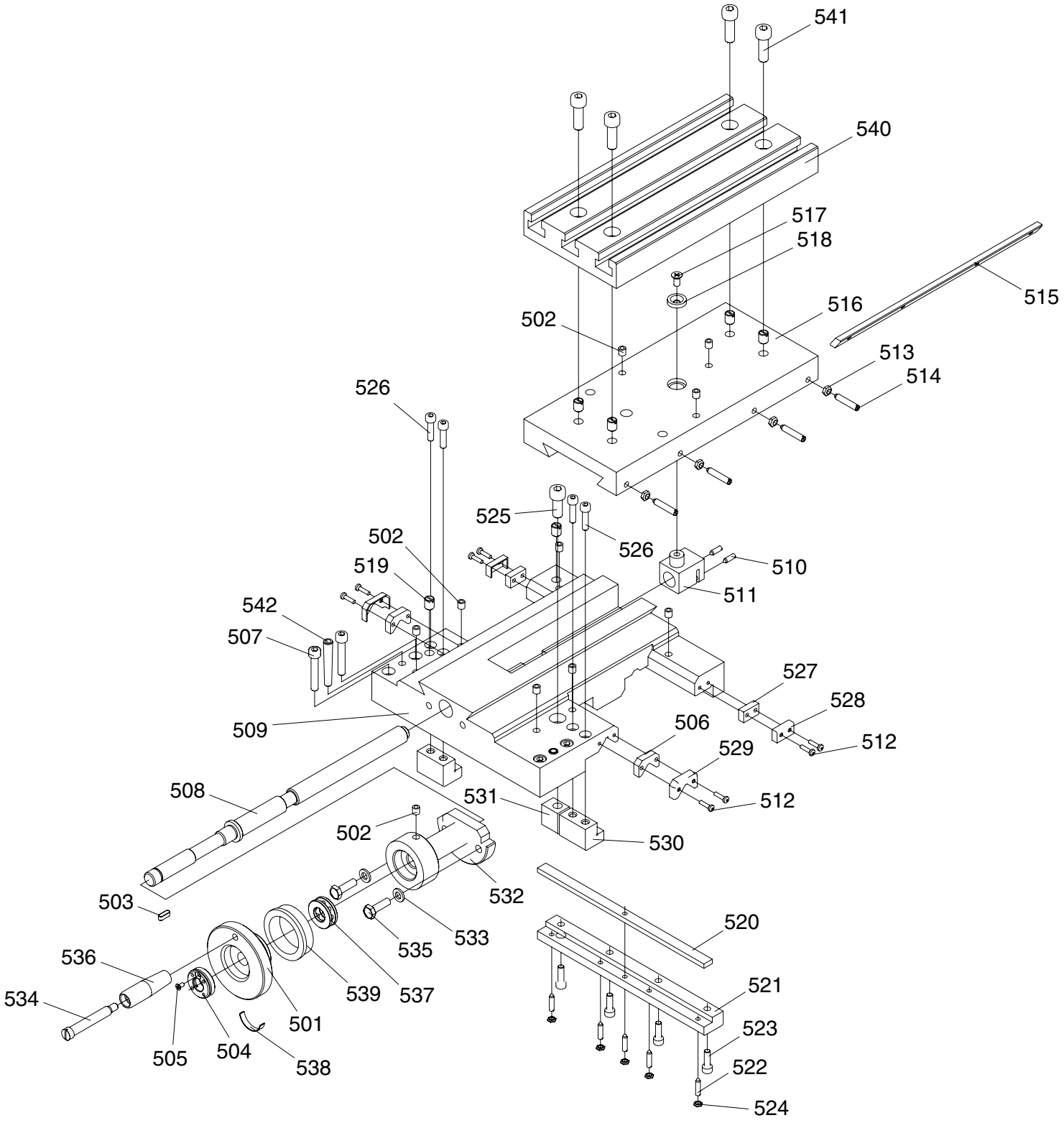
REF	PART #	DESCRIPTION
301	PS28M	PHLP SCR M8-1.25 X 30
302	P0516302	TAILSTOCK T-NUT
303	PW06M	FLAT WASHER 12MM
304	PN09M	HEX NUT M12-1.75
305	P0516305	TAILSTOCK BODY
306	P51101	BEARING 51101
307	P0516307	TAILSTOCK LEADSCREW
308	P0516308	TAILSTOCK SLEEVE
309	P0516309	TUBULAR CLAMP
310	PW01M	FLAT WASHER 8MM
311	P0516311	CLAMP BOLT
312	P0516312	HANDLE
313	P0516313	OIL CUP
314	P0516314	T-TAP FLAT KEY
315	PS11M	PHLP HD SCR M6-1 X 16
316	PS06M	PHLP HD SCR M5-.8 X 20
317	P0516317	TAILSTOCK END COVER
318	P0516318	CYLINDER PIN 4*30
319	P0516319	SPRING BOW
320	P0516320	HAND WHEEL
321	P0516321	HANDLE BOLT
322	P0516322	HANDLE SLEEVE
323	P0516323	INDEX RING
324	P0516324	SQ BOLT M12-1.75 X 100
325	P0516325	TAILSTOCKCLAMP PLATE
326	P0516326	BASE
327	P0516327	ZERO POSITION LABEL
328	P0516328	LABEL RIVET
329	P0516329	INDICATE LABEL
330	P0516330	TAILSTOCK CENTER MT2

REF	PART #	DESCRIPTION
401	P0516401	CUTTER REST BASE
402	P0516402	CLAMP DISC
403	PB09M	HEX BOLT M8-1.25 X 20
404	P0516404	CUTTER REST DISC
405	P0516405	CUTTER REST BOLT
406	PN04M	HEX NUT M4-0.7
407	PS52M	PHLP HD SCR M4-.7 X 20
408	PS02M	PHLP HD SCR M4-.7 X 12
409	P0516409	OIL CUP 10MM
410	P0516410	FIXING PIN
411	P0516411	SQUARE CUTTER REST
412	PS28M	PHLP SCR M8-1.25 X 30
413	P0516413	HANDLE
414	P0516414	HANDLE BASE
415	P0516415	HANDLE SPACER
416	P0516416	SPRING 0.5 X 3.5 X 17MM
417	P0516417	CUTTER REST CARRIAGE
418	P0516418	PAD IRON GIB
419	P0516419	CYLINDER PIN 3 X 10
420	P0516420	CARRIAGE LEAD SCREW
421	PK39M	KEY 3 X 3 X 10
422	P0516422	OIL CUP 6MM
423	P0516423	LEADSCREW SUPPORT
424	PS40M	PHLP HD SCR M5-0.8 X 16
425	P0516425	SPRING PLATE
426	P0516426	HANDLE
427	PN03M	HEX NUT M8-1.25
428	PW01M	FLAT WASHER 8MM
429	P0516429	CARRIAGE HANDWHEEL
430	P0516430	INDEX RING
431	PS11M	PHLP HD SCR M6-1 X 16
432	P0516432	CYLINDER PIN 4 X 16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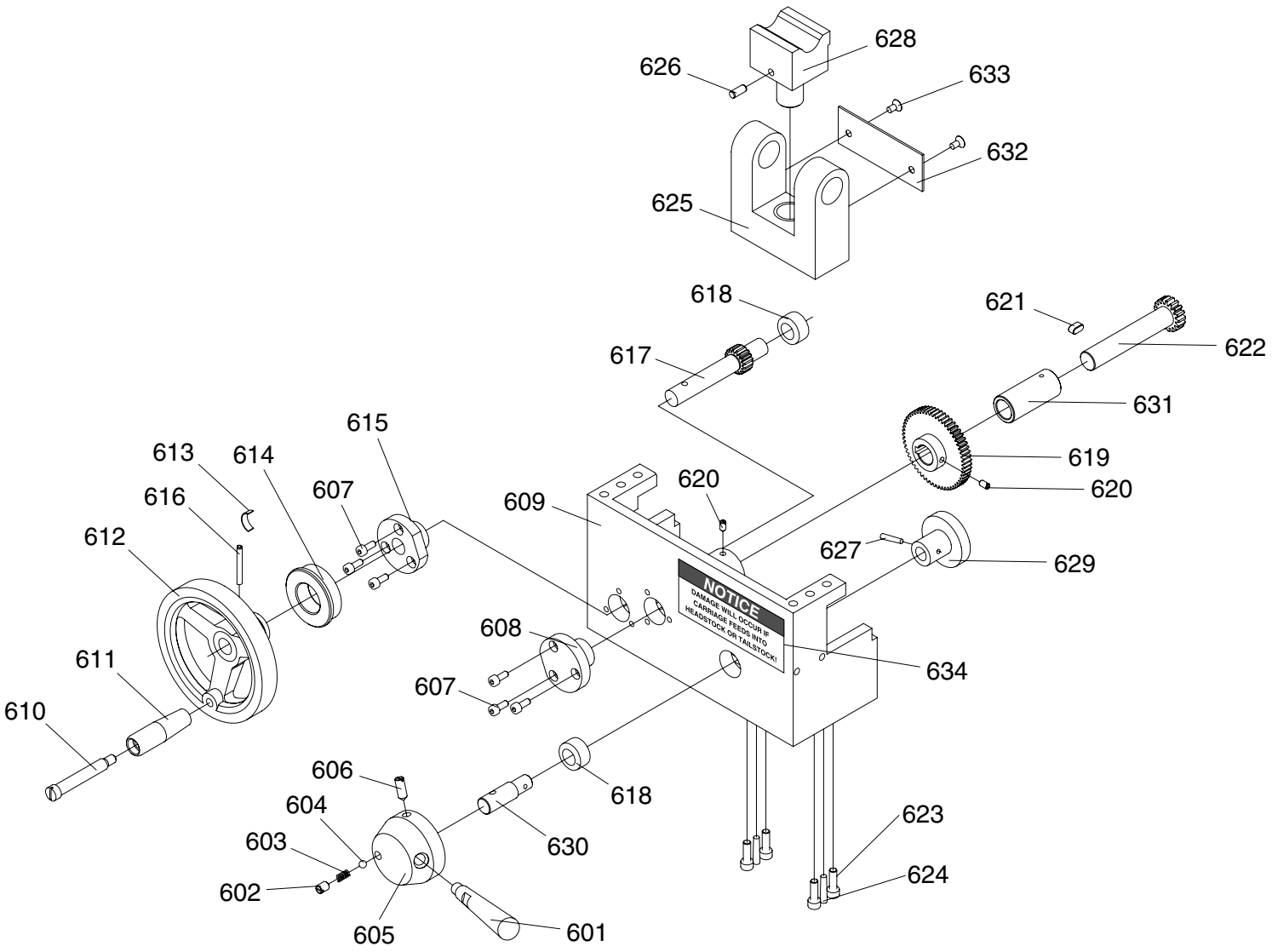
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NOTICE
DAMAGE WILL OCCUR IF
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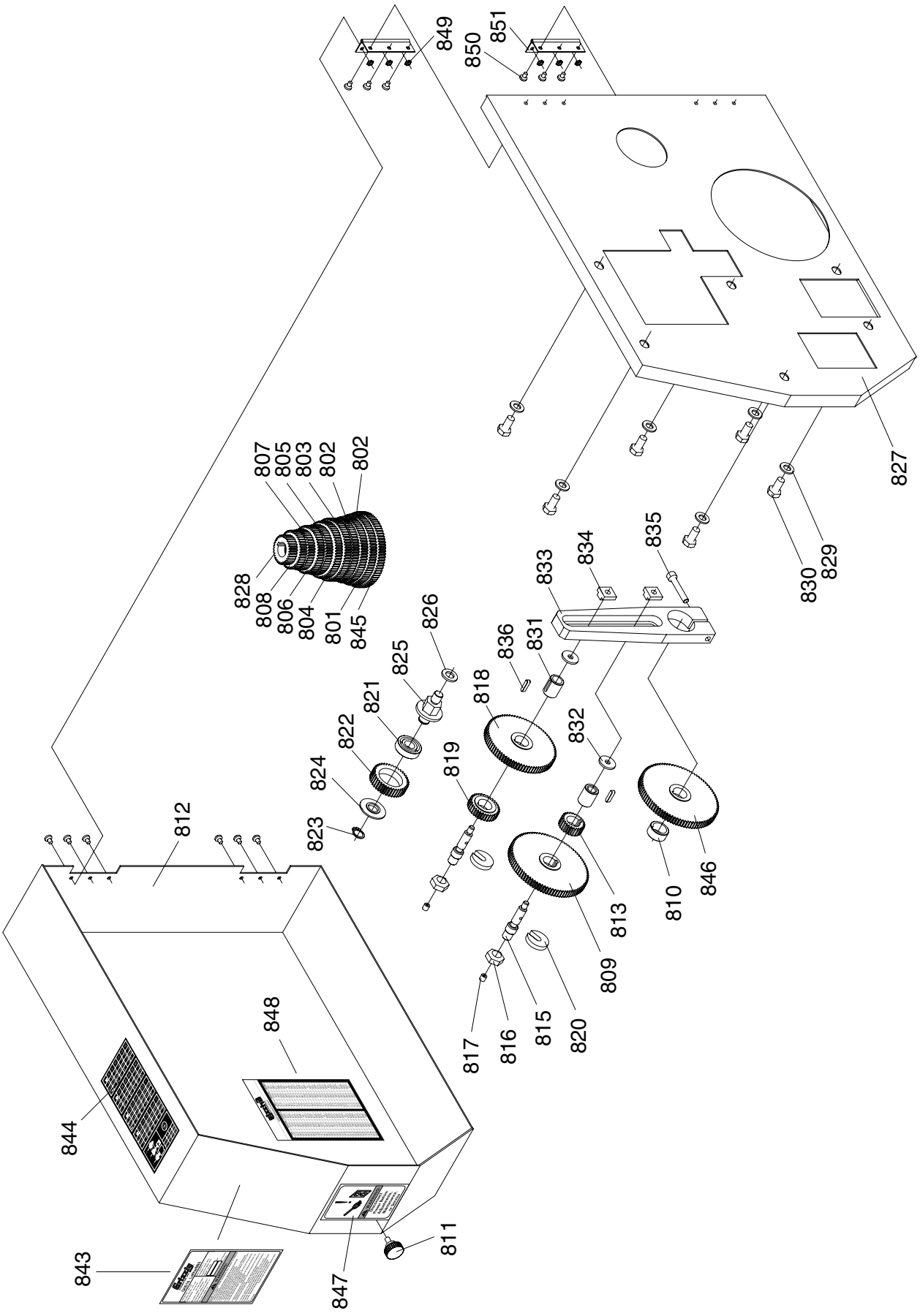
REF	PART #	DESCRIPTION
501	P0516501	HAND WHEEL
502	P0516502	OIL CUP 6MM
503	PK69M	KEY 4 X 4 X 12
504	P0516504	ROUND NUT
505	PS12M	PHLP HD SCR M3-.5 X 6
506	P0516506	OIL-STOPPING FELT
507	PS31M	PHLP HD SCR M6-1.0 X 35
508	P0516508	SADDLE LEADSCREW
509	P0516509	SADDLE
510	PS02M	PHLP HD SCR M4-.7 X 12
511	P0516511	CLEARANCE NUT
512	PS50M	PHLP HD SCR M3-.5 X 12
513	PN06M	HEX NUT M5-0.8
514	PS61M	PHLP HD SCR M5-.8 X 26
515	P0516515	PAD IRON GIB
516	P0516516	CROSS SLIDE
517	PS09M	PHLP HD SCR M5-.8 X 10
518	P0516518	CROSS SLIDE SPACER
519	PS39M	PHLP SCR M8-1.25 X 10
520	P0516520	GIB STRIP
521	P0516521	REAR-CLAMP PLATE
522	PS56M	PHLP HD SCR M4-.7 X 16
523	PS40M	PHLP HD SCR M5-.8 X 16
524	PN04M	HEX NUT M4-0.7
525	PS04M	PHLP SCR M8-1.25 X 20
526	PS06M	PHLP HD SCR M5-.8 X 20
527	P0516527	OIL-STOPPING FELT
528	P0516528	PROTECTING PANEL
529	P0516529	PROTECTING PANEL
530	P0516530	FRONT-CLAMP PLATE
531	P0516531	BRAKING PLATE
532	P0516532	LEADSCREW SUPPORT
533	PW03M	FLAT WASHER 6MM
534	P0516534	HANDLE BOLT
535	PB08M	HEX BOLT M6-1 X 20
536	P0516536	HANDLE SLEEVE
537	P8101	BEARING 8101
538	P0516538	SPRING PLATE
539	P0516539	INDEX RING
542	PRP58M	ROLL PIN 6 X 45

REF	PART #	DESCRIPTION
601	P0516601	HANDLE
602	PS03M	PHLP HD SCR M6-1 X 8
603	P0516603	COMPRESS SPRING
604	P0516604	STEEL BALL 5MM
605	P0516605	HANDLE SEAT
606	PS11M	PHLP HD SCR M6-1 X 16
607	PS38M	PHLP HD SCR M4-.7 X 10
608	P0516608	SHAFT SLEEVE
609	P0516609	APRON BODY
610	P0516610	HANDLE BOLT
611	P0516611	HANDLE SLEEVE
612	P0516612	HAND WHEEL
613	P0516613	SPRING PLATE
614	P0516614	INDEX RING
615	P0516615	SMALL SHAFT SLEEVE
616	P0516616	SPRING PIN 4X30
617	P0516617	SMALL GEAR SHAFT
618	P0516618	SHAFT SLEEVE
619	P0516619	GEAR
620	PS07M	PHLP HD SCR M4-.7 X 8
621	PK06M	KEY 5 X 5 X 10
622	P0516622	GEAR SHAFT
623	PS40M	PHLP HD SCR M5-.8 X 16
624	PRP20M	ROLL PIN 4 X 22
625	P0516625	HALF NUT BASE
626	PRP59M	ROLL PIN 5 X 12
627	PRP42M	ROLL PIN 3 X 20
628	P0516628	HALF NUT
629	P0516629	SLOTTED DISC
630	P0516630	ROTATING SHAFT
631	P0516631	SHAFT SLEEVE
632	P0516632	MOVING PLATE
633	PS07M	PHLP HD SCR M4-.7 X 8
634	P0516634	CARRIAGE FEED NOTICE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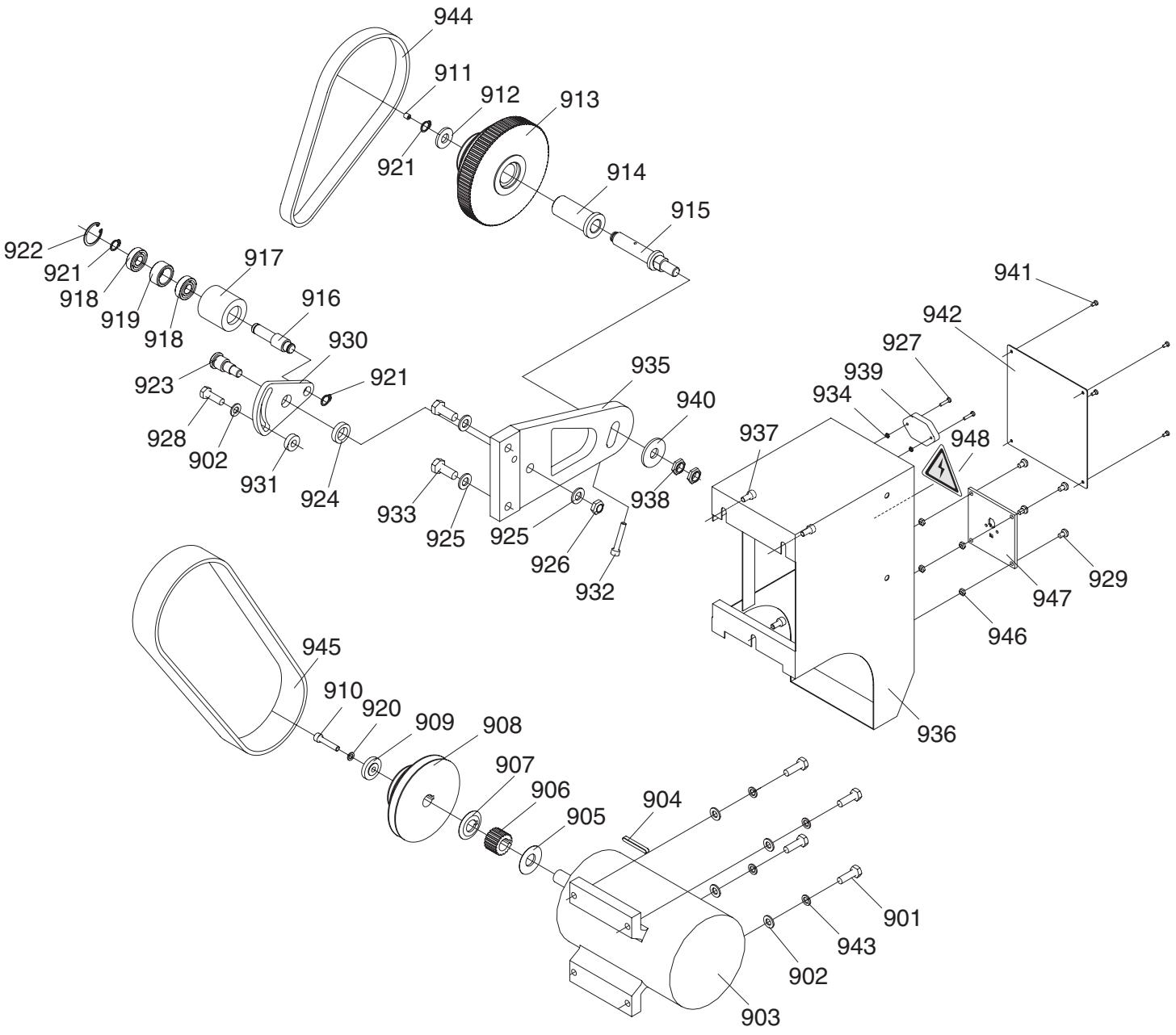
REF	PART #	DESCRIPTION
801	P0516801	GEAR Z:72
802	P0516802	GEAR Z:70
803	P0516803	GEAR Z:68
804	P0516804	GEAR Z:66
805	P0516805	GEAR Z:60
806	P0516806	GEAR Z:50
807	P0516807	GEAR Z:48
808	P0516808	GEAR Z:45
810	P0516810	PIVOT SHAFT SPACER
811	P0516811	KNURLED KNOB
812	P0516812	DRIVE COVER
813	P0516813	GEAR Z:25
815	P0516815	ADJUSTABLE SHAFT
816	PN09M	HEX NUT M12-1.75
817	P0516817	OIL CUP 6MM
818	P0516818	GEAR Z:80
819	P0516819	GEAR Z:33
820	P0516820	OPEN-END LOCK WASHER
821	P6001	BEARING 6001
822	P0516822	GEAR Z:40
823	PR03M	EXT RETAINING RING 12MM
824	P0516824	FRONT SHAFT SPACER

REF	PART #	DESCRIPTION
825	P0516825	FIXED-SHAFT BOLT
826	P0516826	REAR SHAFT SPACER
827	P0516827	SUPPORT PLATE
828	P0516828	GEAR Z:40
829	PW01M	FLAT WASHER 8MM
830	PB03M	HEX BOLT M8-1.25 X 16
831	P0516831	SLIDING BEARING
832	P0516832	ADJ SHAFT SPACER
833	P0516833	GEAR REST
834	P0516834	ADJ SHAFT NUT
835	PS31M	PHLP HD SCR M6-1.0 X 35
836	PK37M	KEY 4 X 4 X 16
843	P0516843	MACHINE ID LABEL
844	P0516844	GEAR/SPEED LABEL
845	P0516845	GEAR Z:75
846	P0516846	GEAR Z:100
847	PLABEL-26	UNPLUG WARNING
848	PLABEL-27	CONVERSION CHART
849	PN04M	HEX NUT M4-.7
850	PS63M	PHLIP HD SCR M6-1.0 X 4
851	P0516851	HINGE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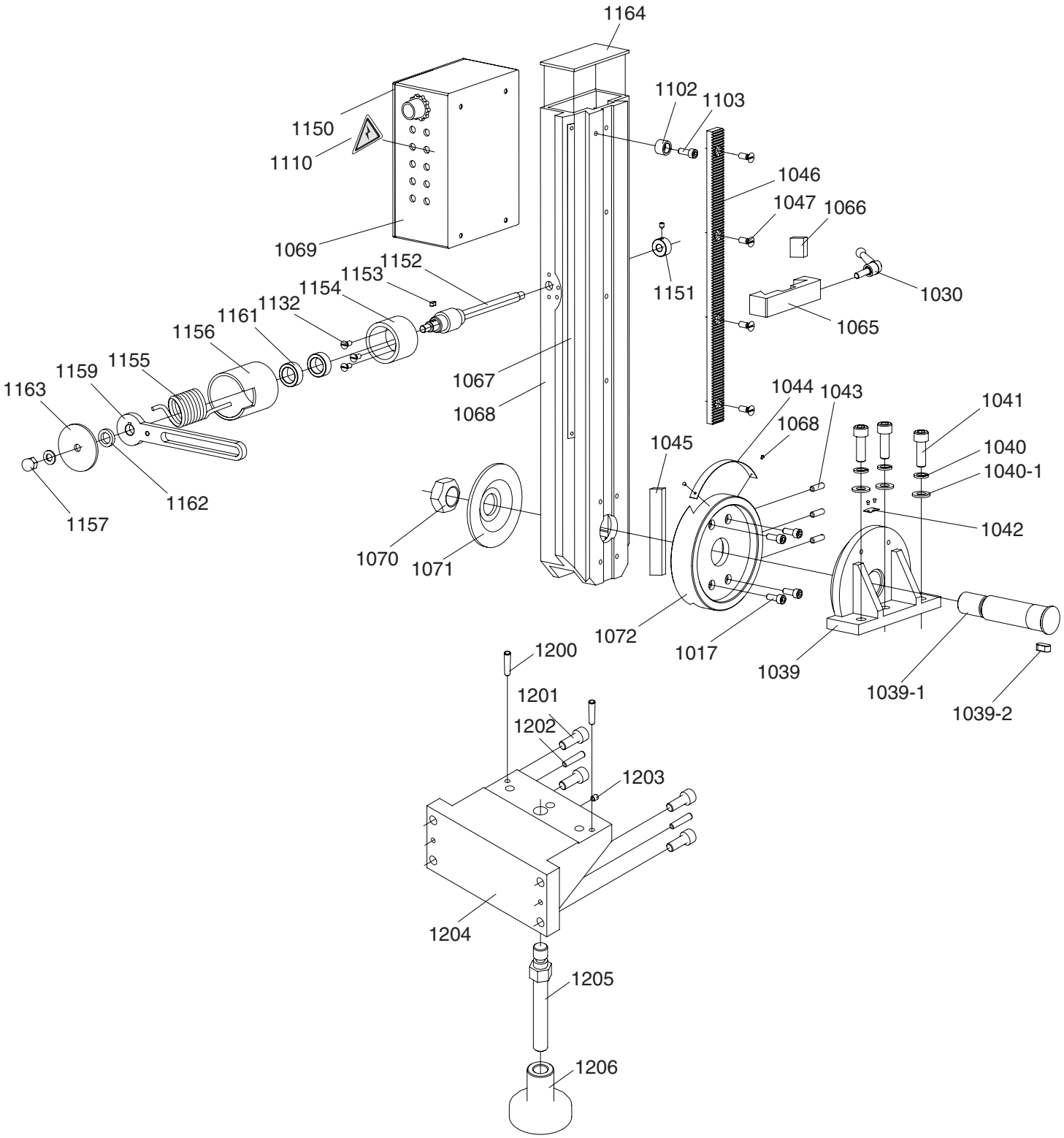
REF	PART #	DESCRIPTION
901	PB26M	HEX BOLT M8-1.25 X 30
902	PW01M	FLAT WASHER 8MM
903	P0516903	AC MOTOR
904	PK02M	KEY 5 X 5 X 40
905	P0516905	MOTOR SHAFT SPACER
906	P0516906	DRIVE PULLEY
907	P0516907	KEYWAY SHAFT SPACER
908	P0516908	MOTOR PULLEY
909	P0516909	CHECK RING
910	PS62M	PHLP HD SCR M6-1.0 X 30
911	P0516911	OIL CUP 6MM
912	P0516912	GREAT WASHER
913	P0516913	COUNTER PULLEY
914	P0516914	SLIDE BEARING
915	P0516915	ARM SHAFT
916	P0516916	BEARING ARBOR
917	P0516917	TENSION PULLEY
918	P6001	BEARING 6001
919	P0516919	SPACER
920	PLW03M	LOCK WASHER 6MM
921	PR03M	EXT RETAINING RING 12MM
922	PR19M	EXT RETAINING RING 28MM
923	P0516923	PIVOT
924	P0516924	PIVOT SPACER

REF	PART #	DESCRIPTION
925	PW04M	FLAT WASHER 10MM.
926	PN02M	HEX NUT M10-1.5
927	PS59M	PHLP HD SCR M3-.5 X 14
928	PB07M	HEX BOLT M8-1.25 X 25
929	PS05M	PHLP HD SCR M5-.8 X 8
930	P0516930	FAN-SUPPORT
931	P0516931	ADJ SLOT SPACER
932	PS31M	PHLP HD SCR M6-1.0 X 35
933	PB32M	HEX BOLT M10-1.5 X 25
934	PN06M	HEX NUT M5-0.8
935	P0516935	PULLEY SUPPORT
936	P0516936	MOTOR COVER
937	PS14M	PHLP HD SCR M6-1 X 12
938	P0516938	ARM SHAFT NUT
939	P0516939	SOCKET OUTLET
940	P0516940	SUPPORT SPACER
941	PS12M	PHLP HD SCR M3-.5 X 6
942	P0516942	ELECTRIC TOP COVER
943	PLW04M	LOCK WASHER 8MM
944	P0516944	TIMING BELT 1.5 X 124 X 15MM
945	PVM30	V-BELT M-30 3L300
946	PN06M	HEX NUT M5-0.8
947	P0516947	MAIN POWER SOCKET
948	PLABEL-14	ELECTRICITY LABEL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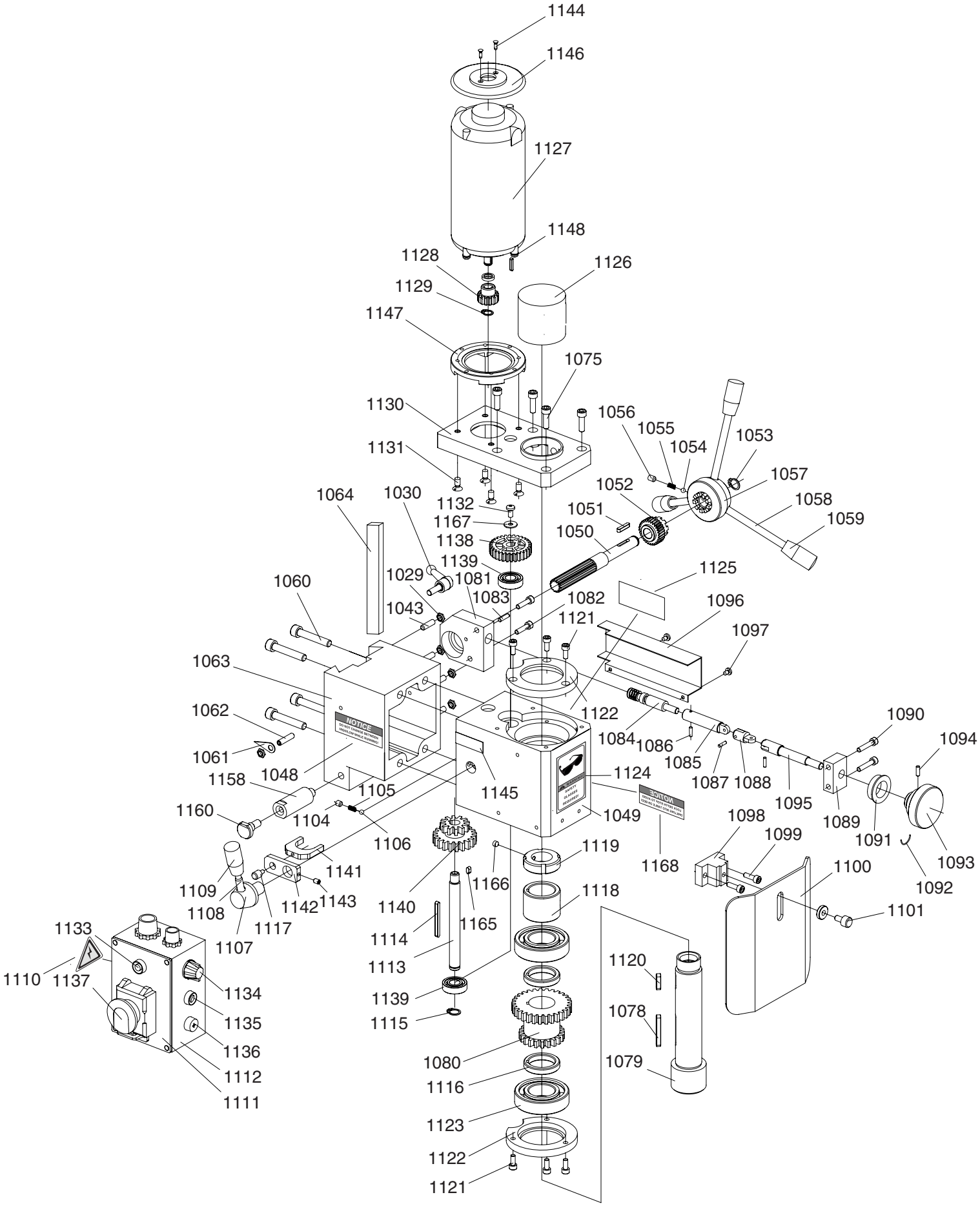
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REF	PART #	DESCRIPTION
1017	PSB01M	CAP SCREW M6-1.0 X 16
1029	PN01M	HEX NUT M6-1.0
1030	P05161030	HANDLE
1039	P05161039	FUSELAGE SEAT
1039-1	P051610391	SHAFT
1039-2	PK70M	KEY 8 X 8 X 12
1040	PLW06M	LOCK WASHER 10MM
1040-1	PW04M	FLAT WASHER 10MM
1041	PSB72M	CAP SCREW M10-1.5 X 30
1042	P05161042	GUIDE FINGER
1043	PSS46M	SET SCREW M6-1.0 X 22
1044	P05161044	RULER
1045	P05161045	WEDGE
1046	P05161046	GEAR RACK
1047	PSB26M	CAP SCREW M6-1 X 12
1048	P05161048	HIGH/LOW NOTICE
1049	P05161049	SPINDLE BOX
1050	P05161050	PINION
1051	PK30M	KEY 4 X 4 X 25
1052	P05161052	BEVEL GEAR
1053	PR03M	EXT RETAINING RING 12MM
1054	P05161054	BALL 5MM
1055	P05161055	SPRING 0.8 X 0.8 X 10MM
1056	PS03M	PHLP HD SCR M6-1 X 8
1057	P05161057	HANDLE STOCK
1058	P05161058	OPERATING LEVER
1059	P05161059	LEVER CAP
1060	P05161060	CAP SCREW
1061	P05161061	GUIDE FINGER
1062	PSB06M	CAP SCREW M6-1 X 25
1063	P05161063	SPINDLE BOX SEAT
1064	P05161064	WEDGE

REF	PART #	DESCRIPTION
1065	P05161065	LIMIT BLOCK
1066	P05161066	WEDGE
1067	P05161067	RULER
1068	P05161068	FUSELAGE
1069	P05161069	ELECTRIC BOX
1070	PLN09	LOCK NUT M12- 1.75
1071	P05161071	BIG WASHER
1072	P05161072	CONNECTING STRUT
1075	PSB02M	CAP SCREW M6-1.0 X 20
1078	PK02M	KEY 5 X 5 X 40
1079	P05161079	SPINDLE
1080	P05161080	TRANSMISSION GEAR
1081	P05161081	SUPPORT BLOCK
1082	PS06M	PHLP HD SCR M5-.8 X 20
1083	PRP60M	PIN 4 X 15
1084	P05161084	WORM
1085	P05161085	SLEEVE
1086	PRP61M	ROLL PIN 3 X 12
1087	PRP61M	ROLL PIN 3 X 12
1088	P05161088	ADJUSTABLE UNION
1089	P05161089	BRACKET
1090	PS22M	PHLP HD SCR M5-.8 X 25
1091	P05161091	DIAL
1092	P05161092	SPRING STEEL 1MM
1093	P05161093	SMALL HAND WHEEL
1094	PS40M	PHLP HD SCR M5-.8 X 16
1095	P05161095	SMALL SHAFT
1096	P05161096	COVER
1097	PS17M	PHLP HD SCR M4-.7 X 6
1098	P05161098	DUST COVER SUPPORT
1099	PS40M	PHLP HD SCR M5-.8 X 16

REF	PART #	DESCRIPTION
1100	P05161100	DUST GUARD
1101	P05161101	CLAMP BOLT M6-1 X 12
1102	P05161102	UPPER END WASHER
1103	P05161103	END SCREW M6-1 X 16
1104	PSS02M	SET SCREW M6-1 X 6
1105	P05161105	SPRING 0.8 X 4.8 X 10MM
1106	P05161106	BALL 5MM
1107	P05161107	HANDLE SEAT
1108	P05161108	DBL HD BOLT M8-1.25 X 70
1109	P05161109	KNOB
1110	PLABEL-14	ELECTRICITY LABEL
1111	P05161111	CONTROLLER
1112	P05161112	LABEL ON CONTROLLER
1113	P05161113	SHAFT I
1114	PK71M	KEY 4 X 4 X 45
1115	PR49M	INT RETAINING RING 12MM
1116	P05161116	SPACING RING
1117	P05161117	SMALL SHAFT
1118	P05161118	SPACING RING
1119	P05161119	SPINDLE NUT
1120	PK12M	KEY 5 X 5 X 30
1121	PSB03M	CAP SCREW M5-.8 X 8
1122	P05161122	BEARING COVER
1123	P80206	BALL BEARING 80206
1124	PLABEL-11	SAFETY GLASSES LABEL
1125	P05161125	FINE FEEDING LABEL
1126	P05161126	PROTECTING COVER
1127	P05161127	MOTOR
1128	P05161128	MOTOR GEAR
1129	PR16M	EXT RETAINING RING 9MM
1130	P05161130	MOTOR SEAT
1131	PFH02M	FLAT HD SCR M6-1 X 12
1132	PS05M	PHLP HD SCR M5-.8 X 8
1133	P05161133	LAMP
1134	P05161134	SPEED CONTROL KNOB
1135	P05161135	SWITCH
1136	P05161136	FUSE BOX
1137	P05161137	STOP SWITCH

REF	PART #	DESCRIPTION
1138	P05161138	GEAR
1139	P80101	BALL BEARING 80101
1140	P05161140	TRANSMISSION GEAR
1141	P05161141	BAR
1142	P05161142	LINKING BOARD
1143	PSS31M	SET SCREW M5-0.8 X 8
1144	P05161144	TAPPING SCREW 2.9 X 8MM
1145	P05161145	H/L LABEL
1146	P05161146	MOTOR COVER
1147	P05161147	MOTOR FLANGE
1148	PS24M	PHLP HD SCR M6-1.0 X 10
1149	P05161149	WARNING LABEL
1150	P05161150	PC BOARD
1151	P05161151	LOCK SLEEVE
1152	P05161152	ROTOR SHAFT
1153	PK72M	KEY 4 X 4 X 6
1154	P05161154	SPRING SUPPORT
1155	P05161155	TORSION SPRING
1156	P05161156	COVER
1157	PN03M	HEX NUT M8-1.25
1158	P05161158	PROP
1159	P05161159	SUPPORTING SHANK
1160	P05161160	SHANK SCREW
1161	P05161161	ROTOR SHAFT SPACER
1162	P05161162	SHANK COVER SPACER
1163	P05161163	SHANK COVER
1164	P05161164	TOP COVER
1165	PS12M	PHLP HD SCR M3-.5 X 6
1166	PS03M	PHLP HD SCR M6-1 X 8
1167	PW02M	FLAT WASHER 5MM
1168	P05161168	DEPTH STOP NOTICE
1200	PRP08M	ROLL PIN 6 X 30
1201	PS58M	PHLP HD SCR M10-1.5 X 40
1202	PRP08M	ROLL PIN 6 X 30
1203	PS03M	PHLP HD SCR M6-1 X 8
1204	P05161204	SUPPORT
1205	P05161205	SUPPORT BOLT
1206	P05161206	SUPPORT PLATE

Warranty and Returns

Grizzly Imports, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number,'' which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.

WARRANTY CARD

NAME_____ PHONE NUMBER_____
STREET_____
CITY_____STATE_____ZIP _____
MODEL# G0516 Lathe/Mill INVOICE#_____ SERIAL#_____

The following information is given on a voluntary basis. This information will be used for marketing purposes to help Grizzly develop better products. Your name will be included in our mailing **list** only. It will not be sold to other companies. of course, all information is strictly confidential.

1. How did you find out about us?

__Advertisement __Friend __Website
__Catalog __Card deck __Other_____

2. Do you think your machine represents good value? __YES __NO

3. Would you allow us to use your name as a reference for Grizzly customers in your area? __YES __NO
(Note: Your **name** will be used a maximum of three **times.)**

4. To which of the following publications do you subscribe? Check all that apply.

__Home Shop Machinist __Rifle Magazine Other _____
__Projects in Metal __Hand Loader Magazine
__Modeltec __Precision Shooter
__Live Steam __RC Modeler
__Shotgun News __Model Airplane News

5. What is your annual household income?

__$20,000-$30,000 __$50,001-$60,000 __$80,000-$90,000
__$30,001-$40,000 __$60,001-$70,000 __+$90,000
__$40,001-$50,000 __$70,001-$80,000

6. To which age group do you belong?

__20-30 __41-50 __61-70
__31-40 __51-60 __+70

7. Which of the following machines or accessories do you own? Check all that apply.

__Engine Lathe __Abrasive Cutoff __Sheet Metal Machine
__Band Saw (Metal) __Arc Welder __Other _____
__Band Saw (Wood) __Oxy/Ac. Outfit
__Milling Machine __Air Compressor
__Bench Grinder __Drill Press

8. How many of the machines you checked in Question 7 are Grizzly machines? _____

9. Which of the following tooling and accessories do you own? Check all that apply.

__Milling Vises __Collet Closer __Digital Readout
__Indexing Head __Taper Attachment __Tool Post Grinder
__Rotary Table __Boring Head __Other _____

10. In the space below, list three tools you would like Grizzly to carry.

11. Of all the mail order metalworking company's you have purchased from, how do you rate Grizzly in terms of overall customer satisfaction?

__The best __Above average __Average
__Below average __The worst

12. Comments_____
_____
_____
_____

CUT ALONG DOTTED LINE

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